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(57) **ABSTRACT**

Systems and methods that enable a user at a streaming device to create, configure, and transmit a live stream via a live streaming platform. In various embodiments, the streaming device provides the ability to capture the relevant game play displays displayed by the display device of the streaming device being played by the streamer and the audio of such game plays, the ability to capture the video of at least parts of the streamer, the ability to capture the audio of the streamer, the ability to control, adjust, modify, and/or otherwise configure a stream mix, the ability to view the stream mix, the ability to encode the video and audio, and/or the ability to record the stream mix including the game play related video and audio and the streamer related video and audio.

**17 Claims, 21 Drawing Sheets**

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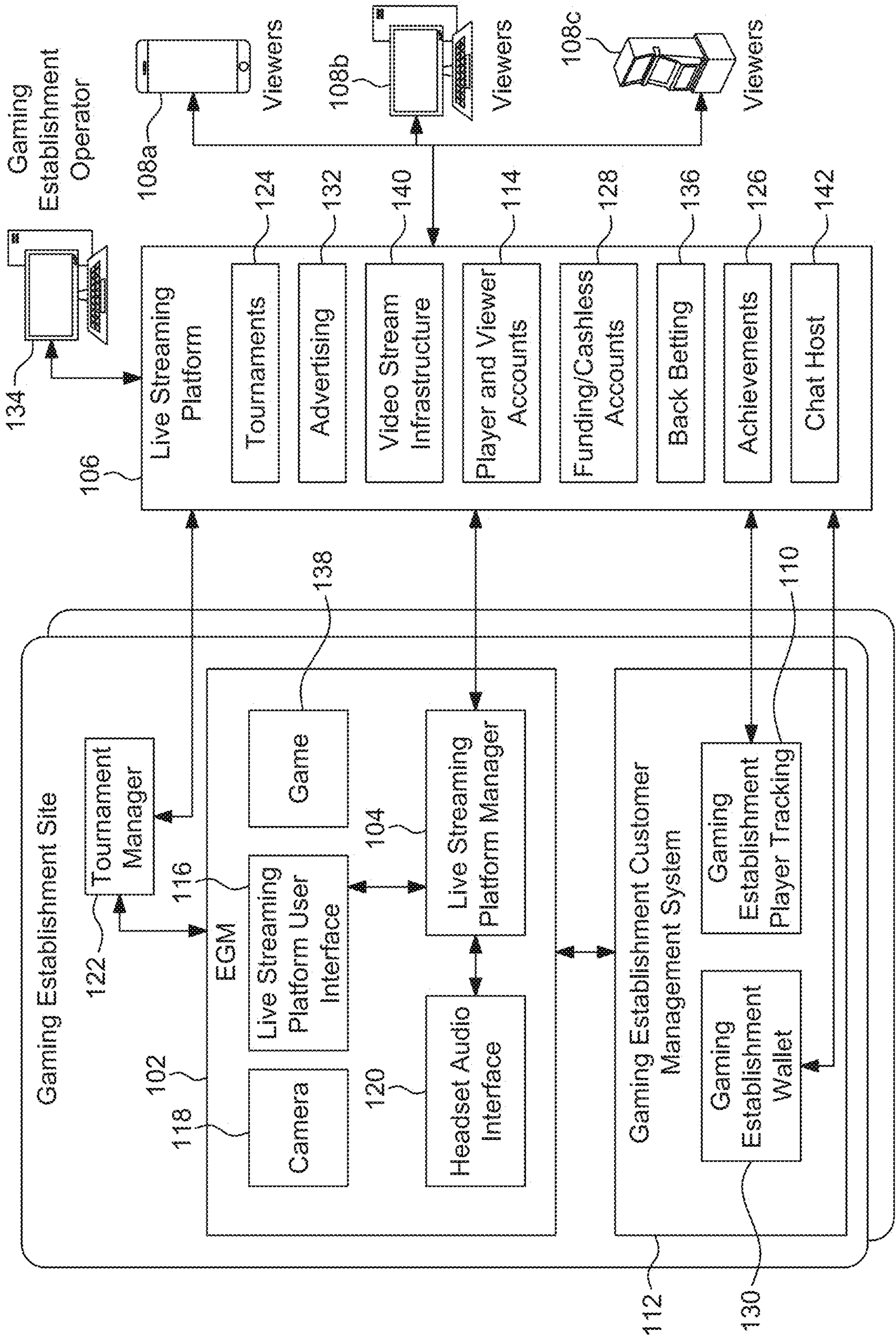


FIG. 1A



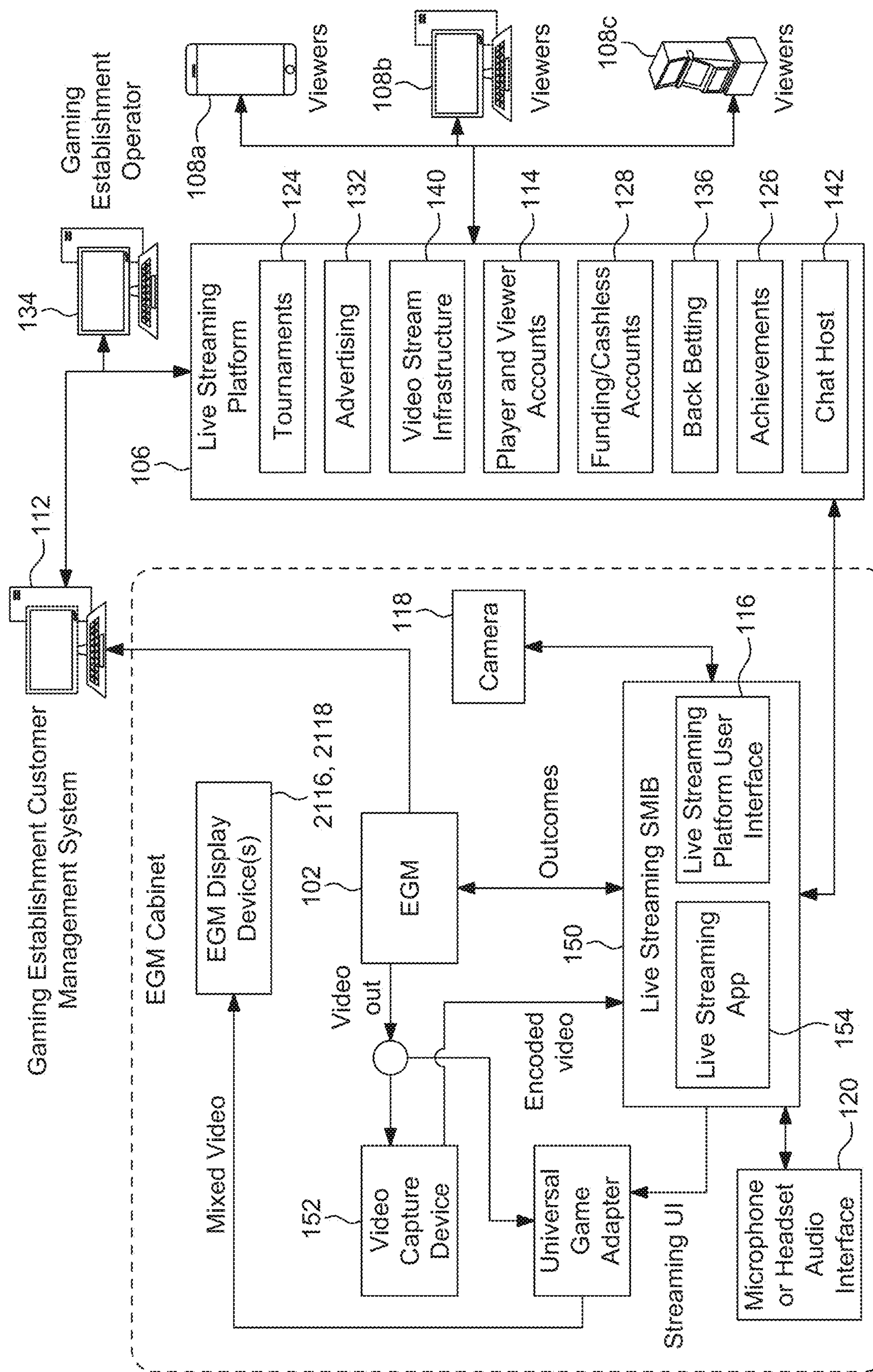


FIG. 1B

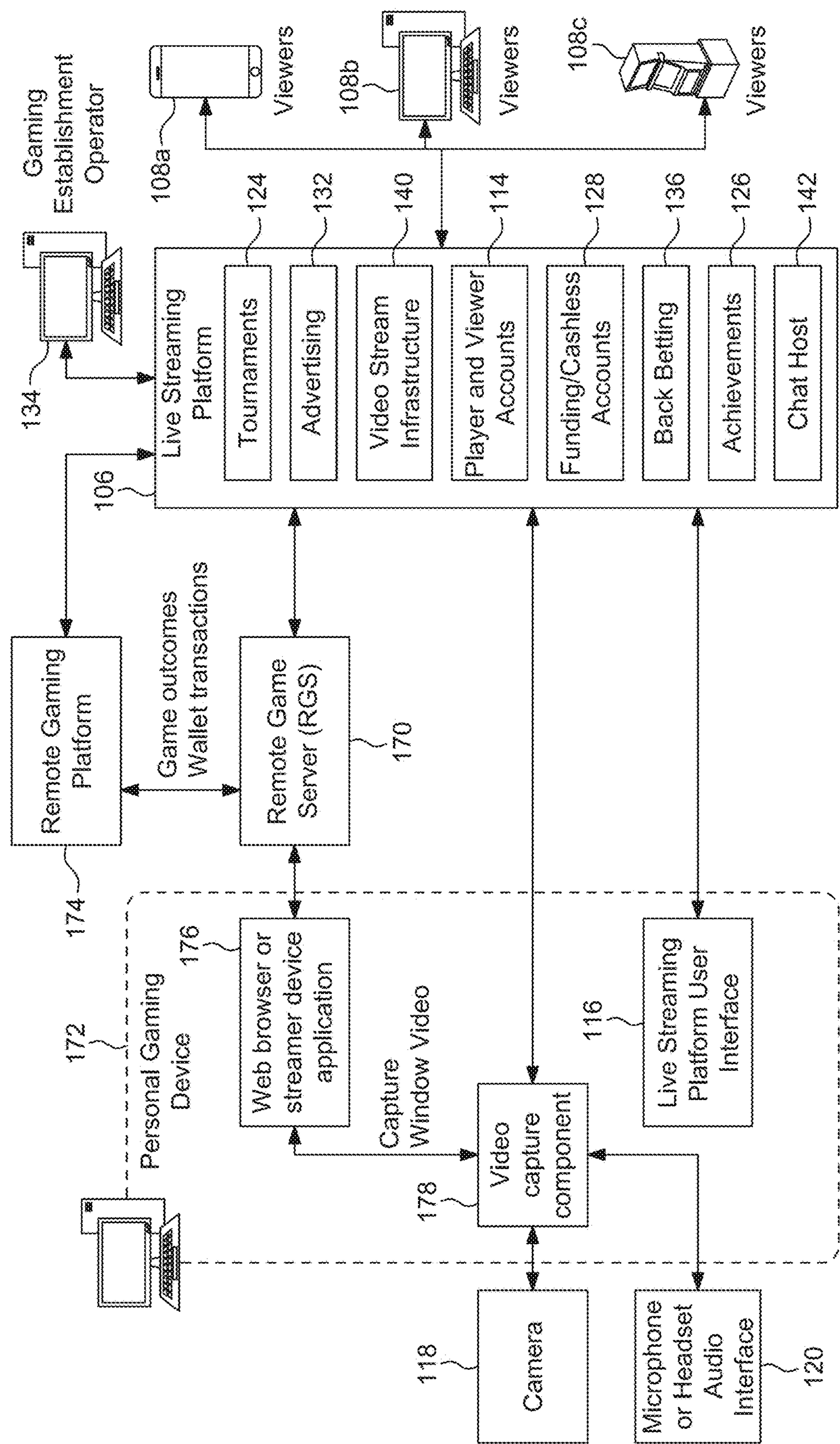


FIG. 1C



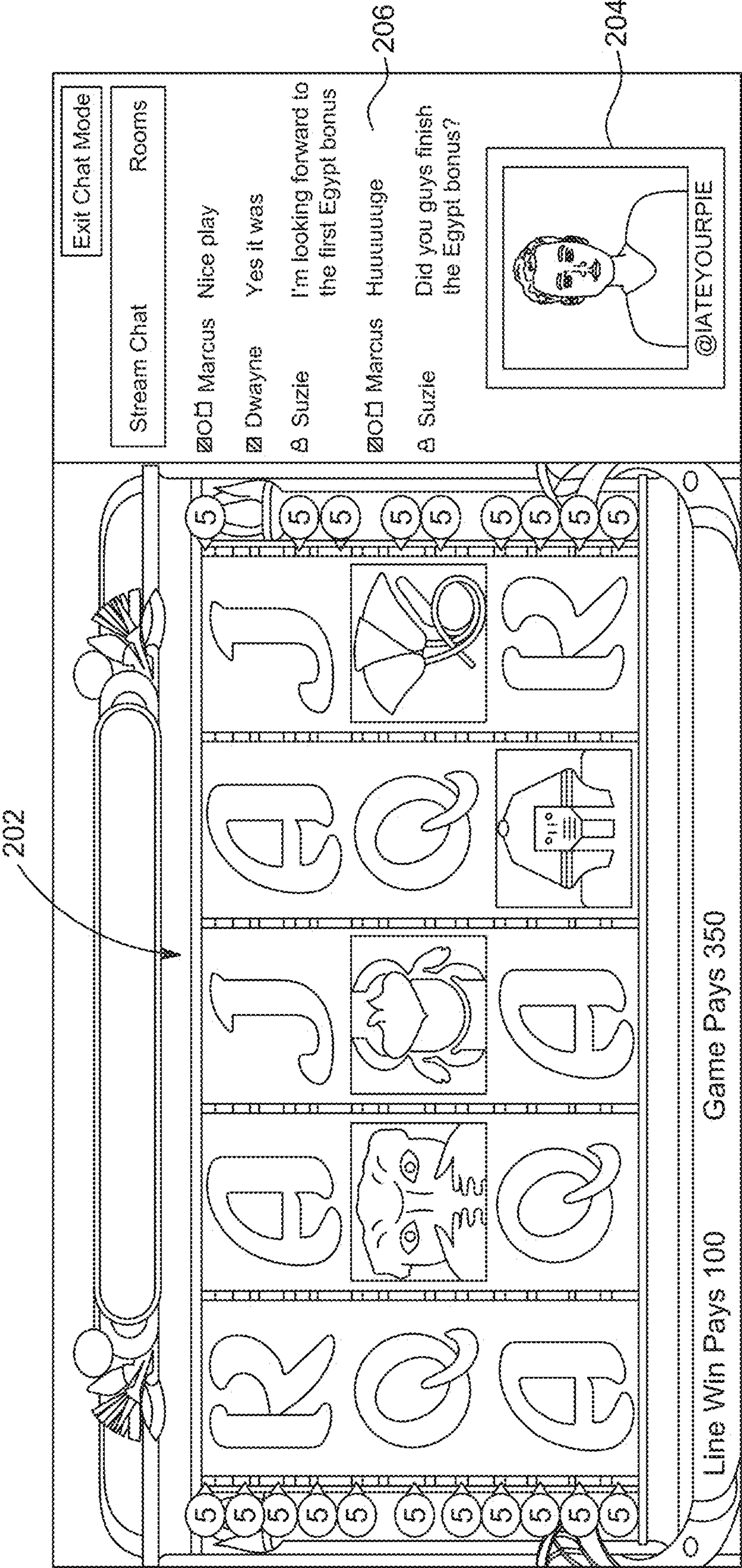


FIG. 2

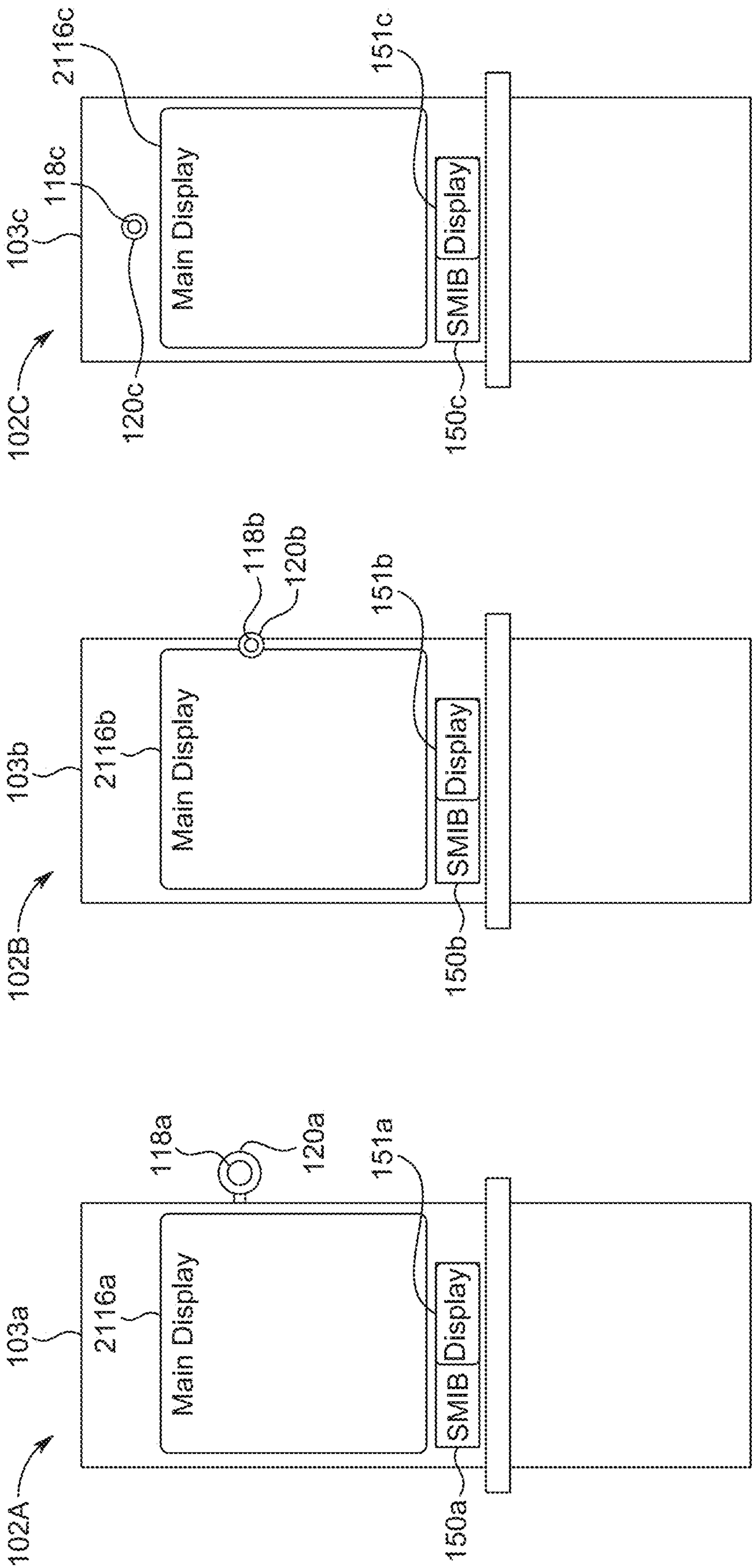


FIG. 3C

FIG. 3B

FIG. 3A

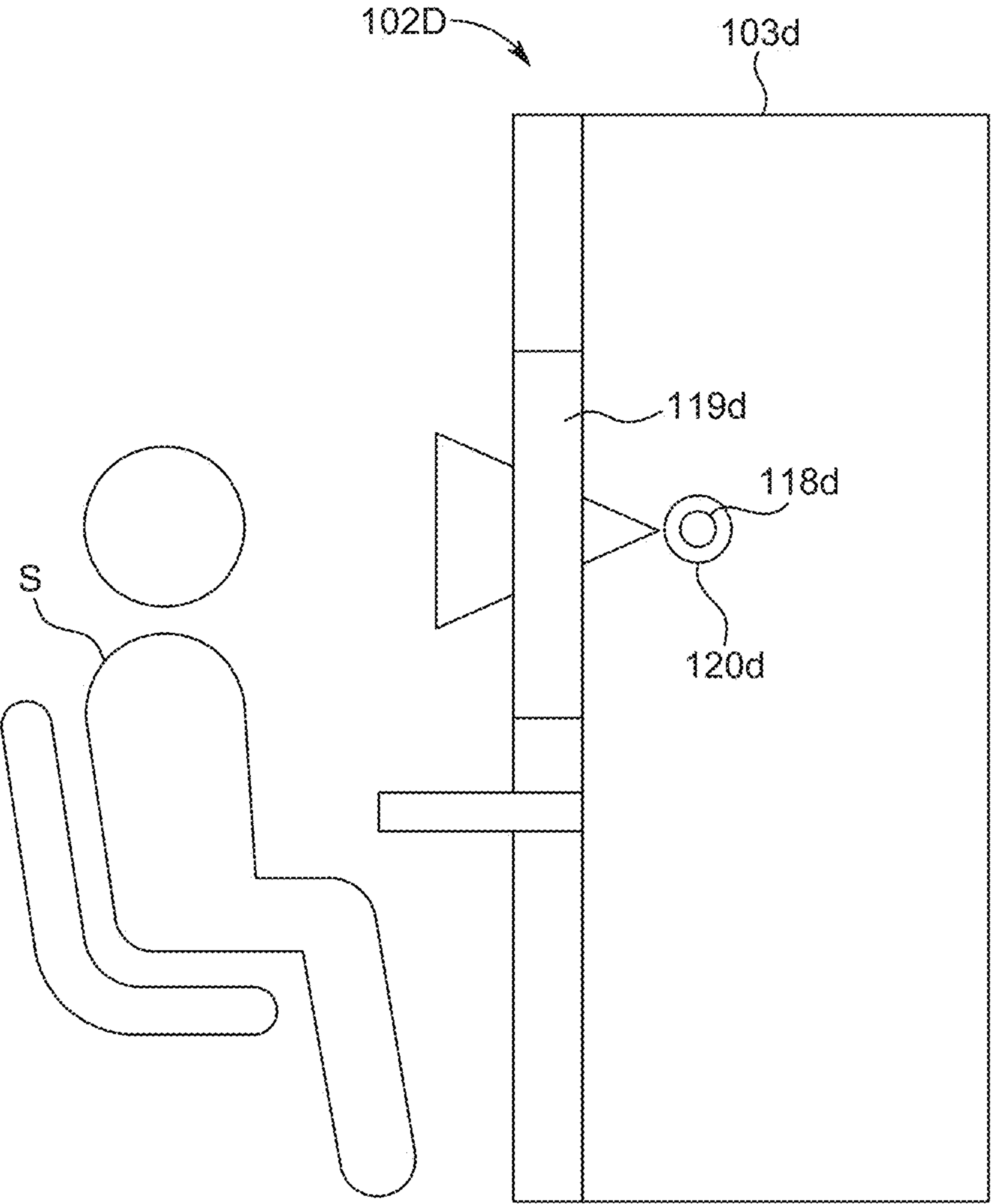


FIG. 3D



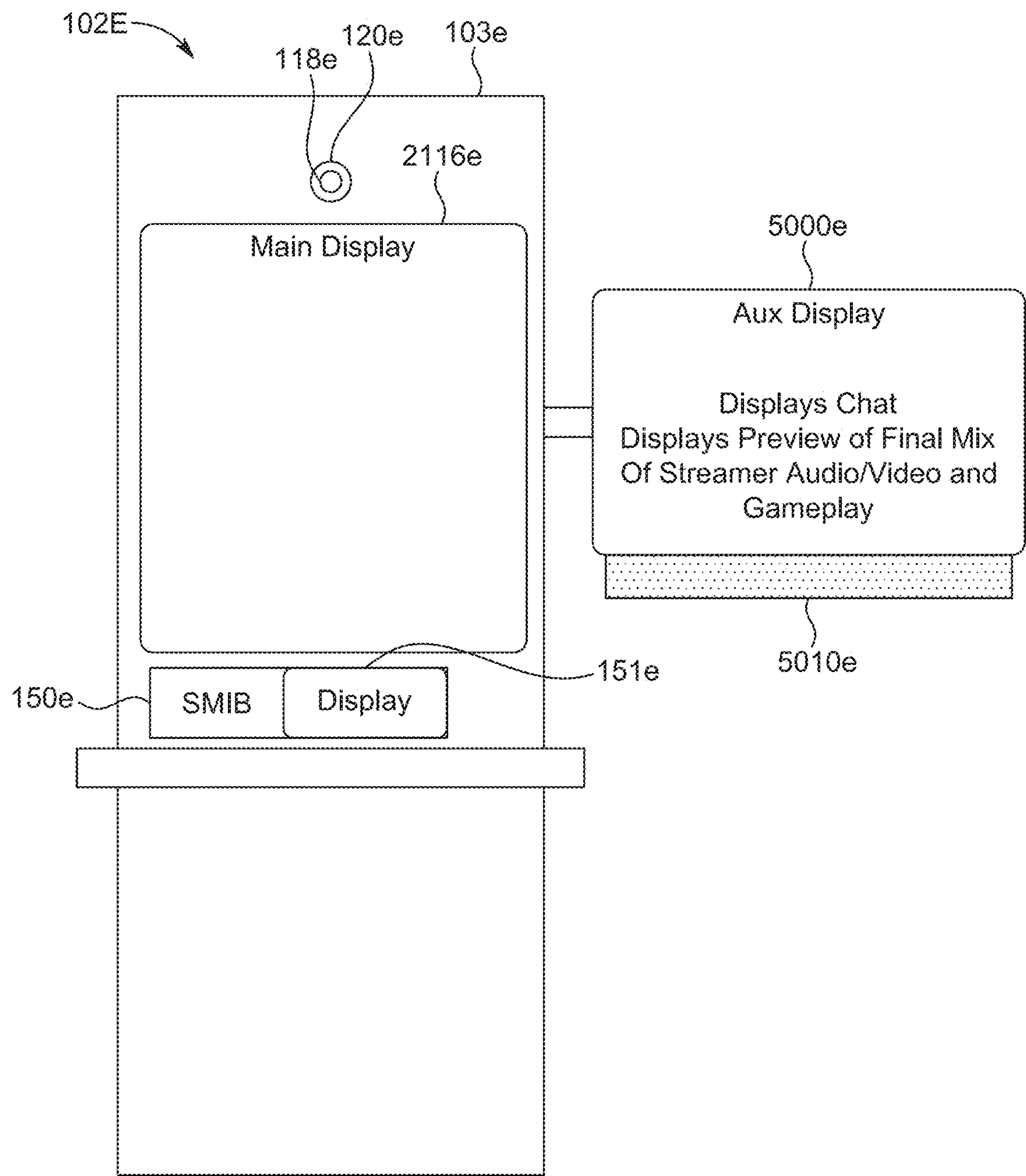


FIG. 3E

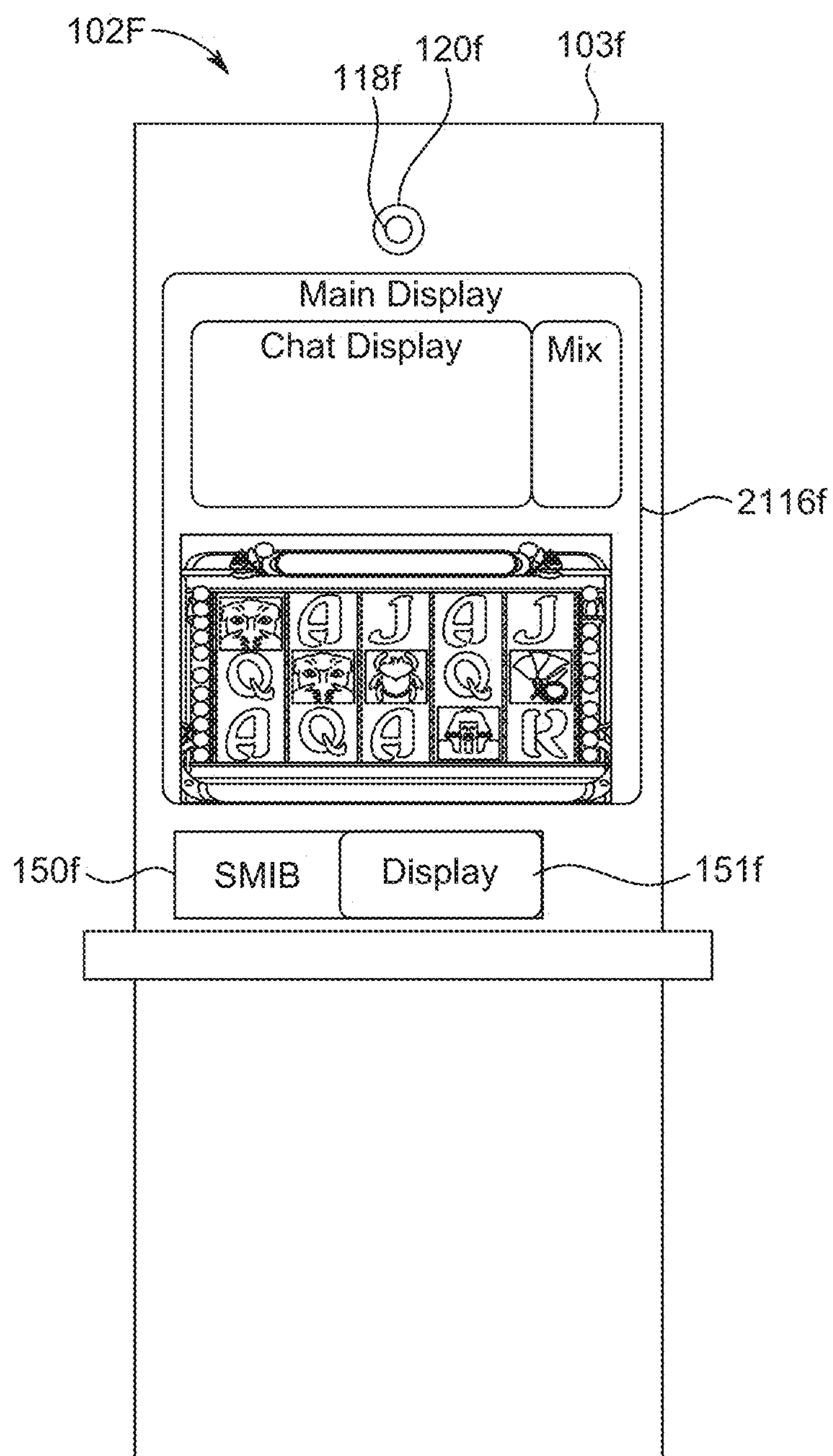


FIG. 3F

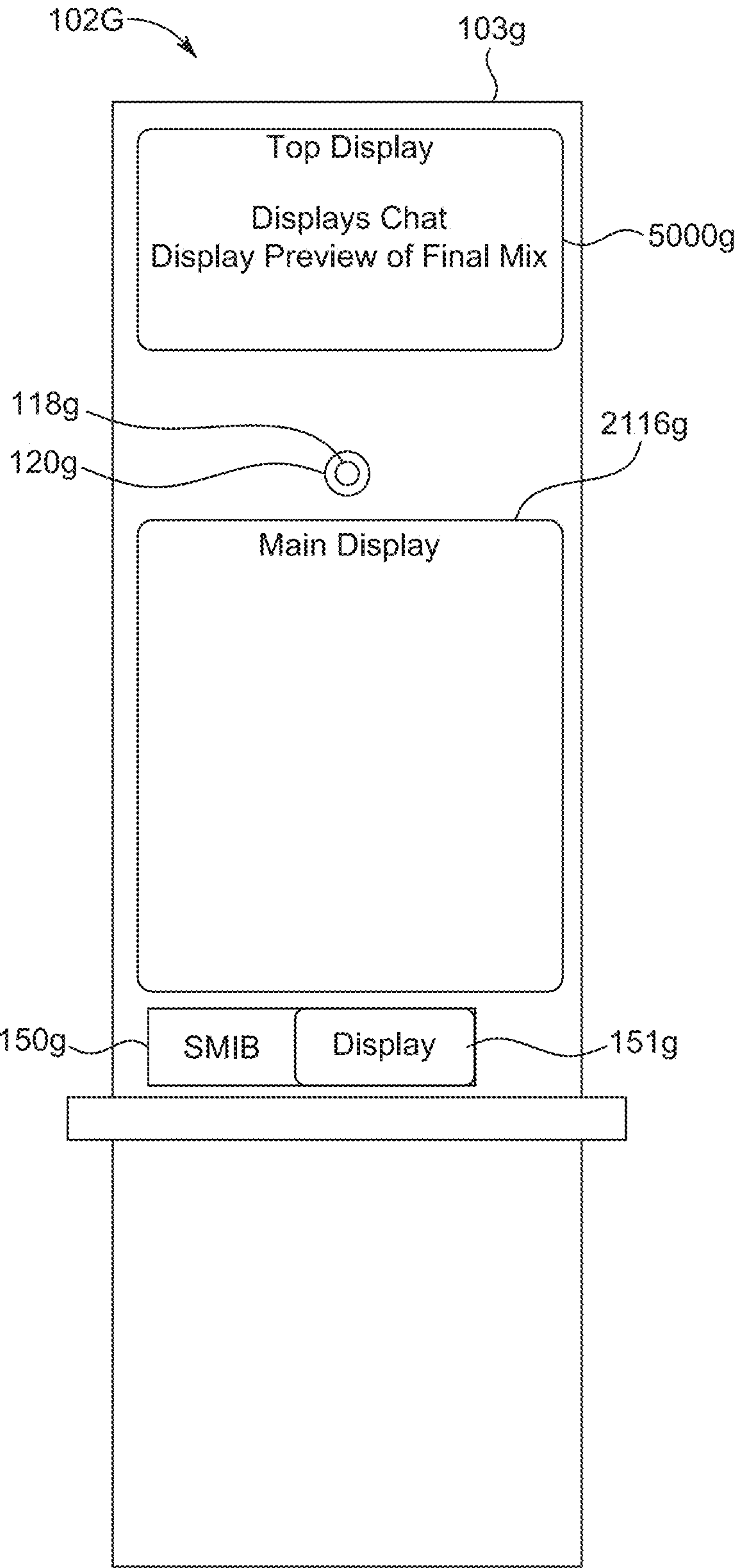


FIG. 3G



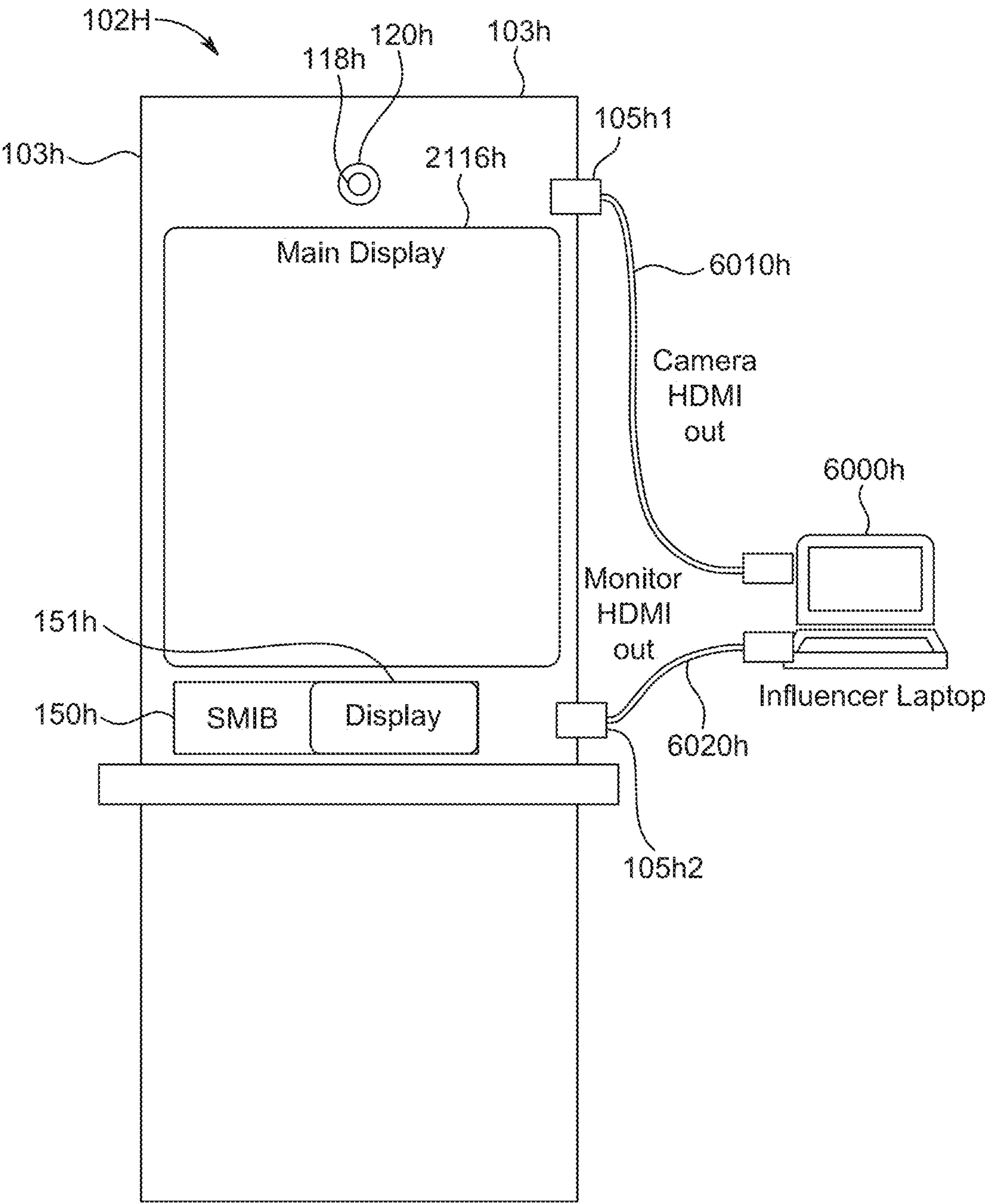


FIG. 3H

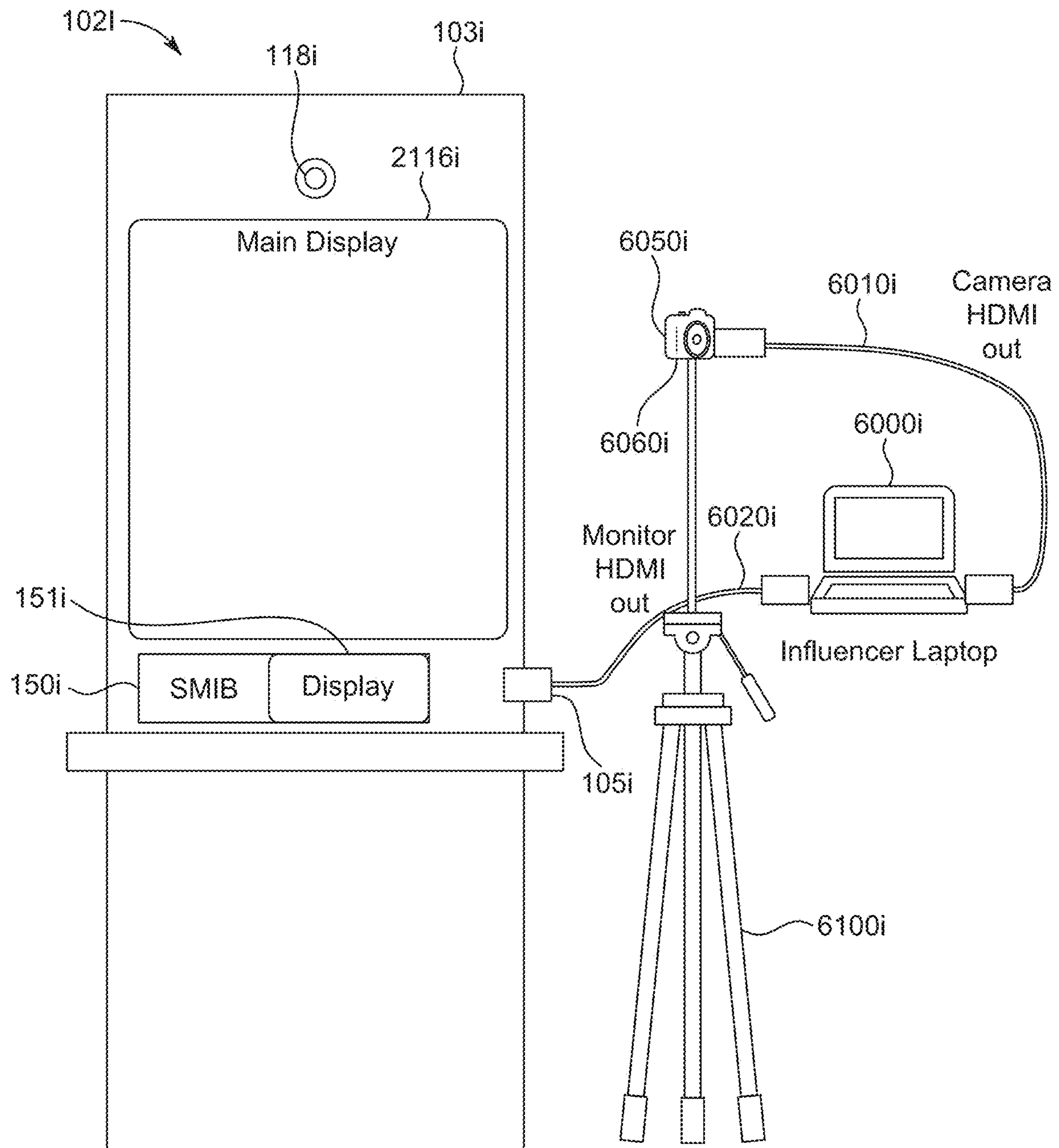


FIG. 3I

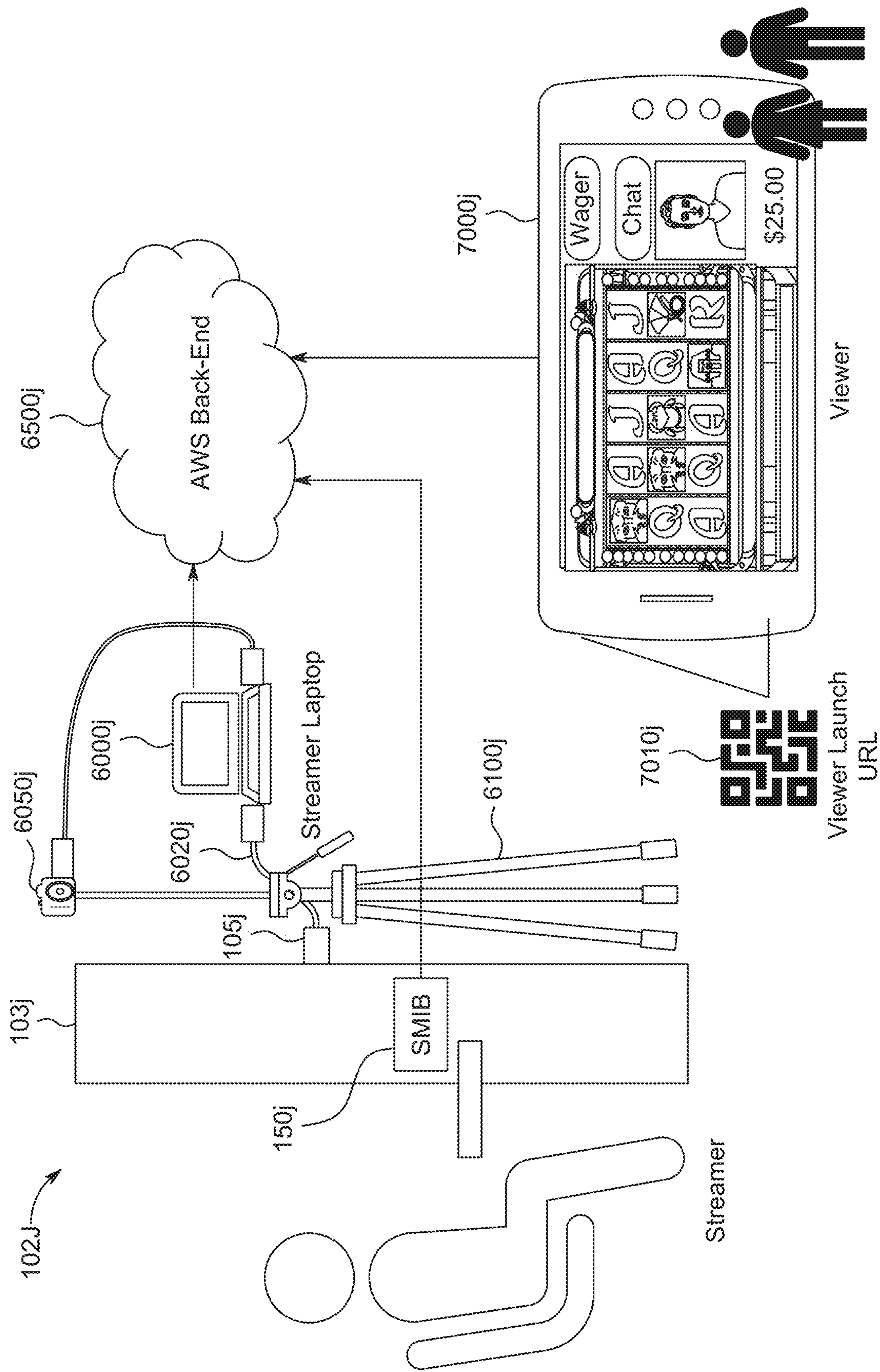


FIG. 3J



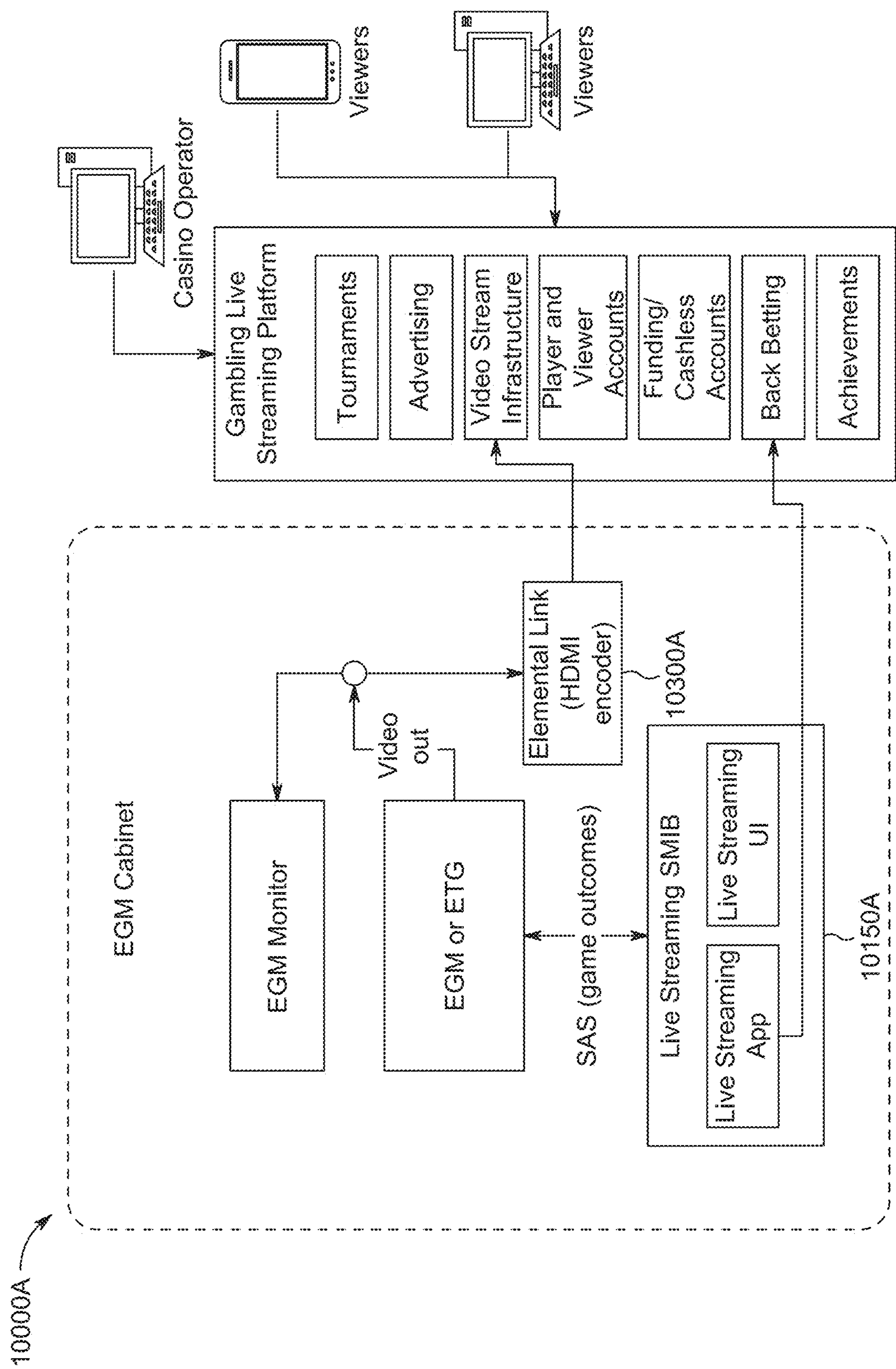


FIG. 4A

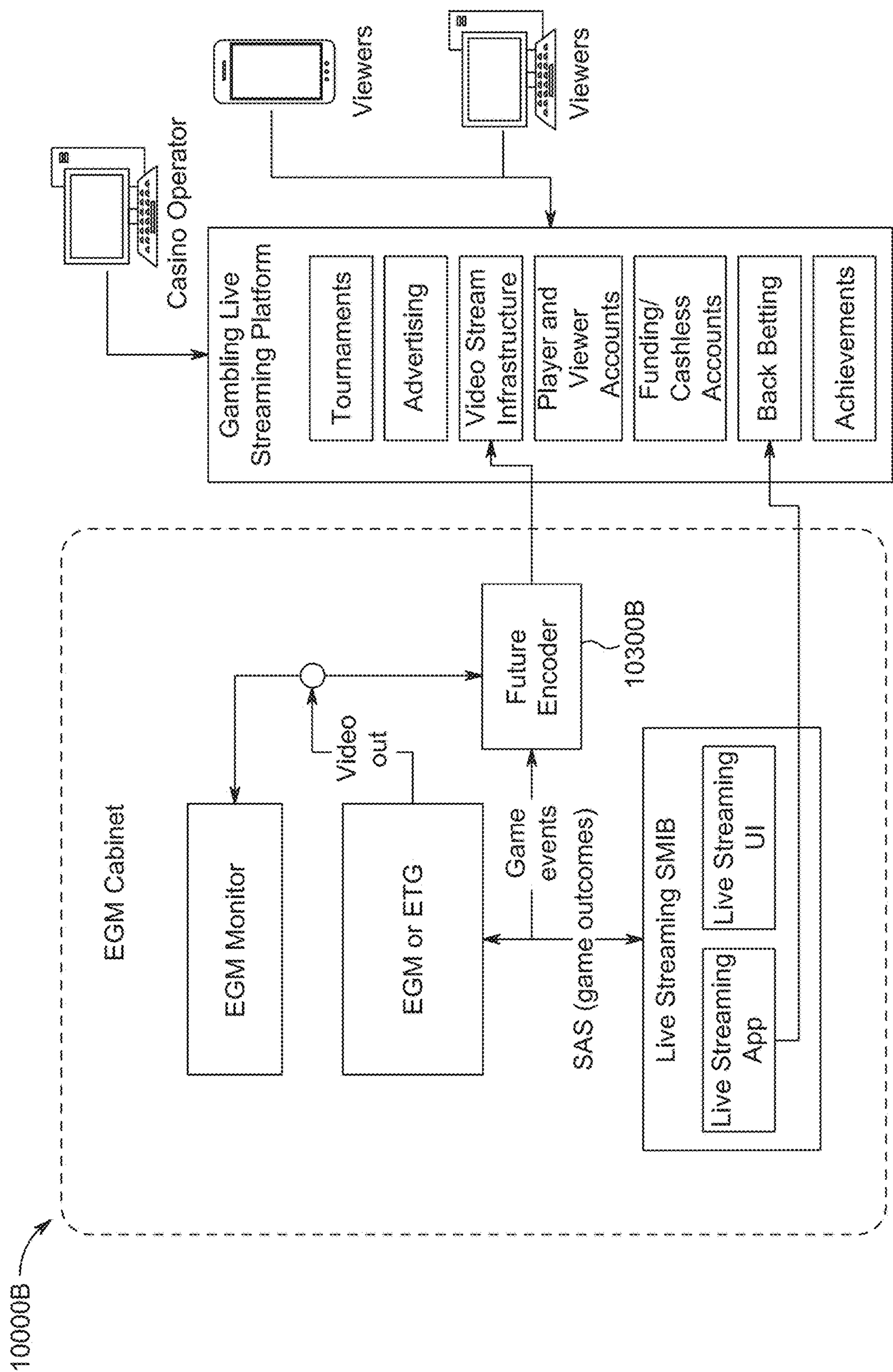


FIG. 4B

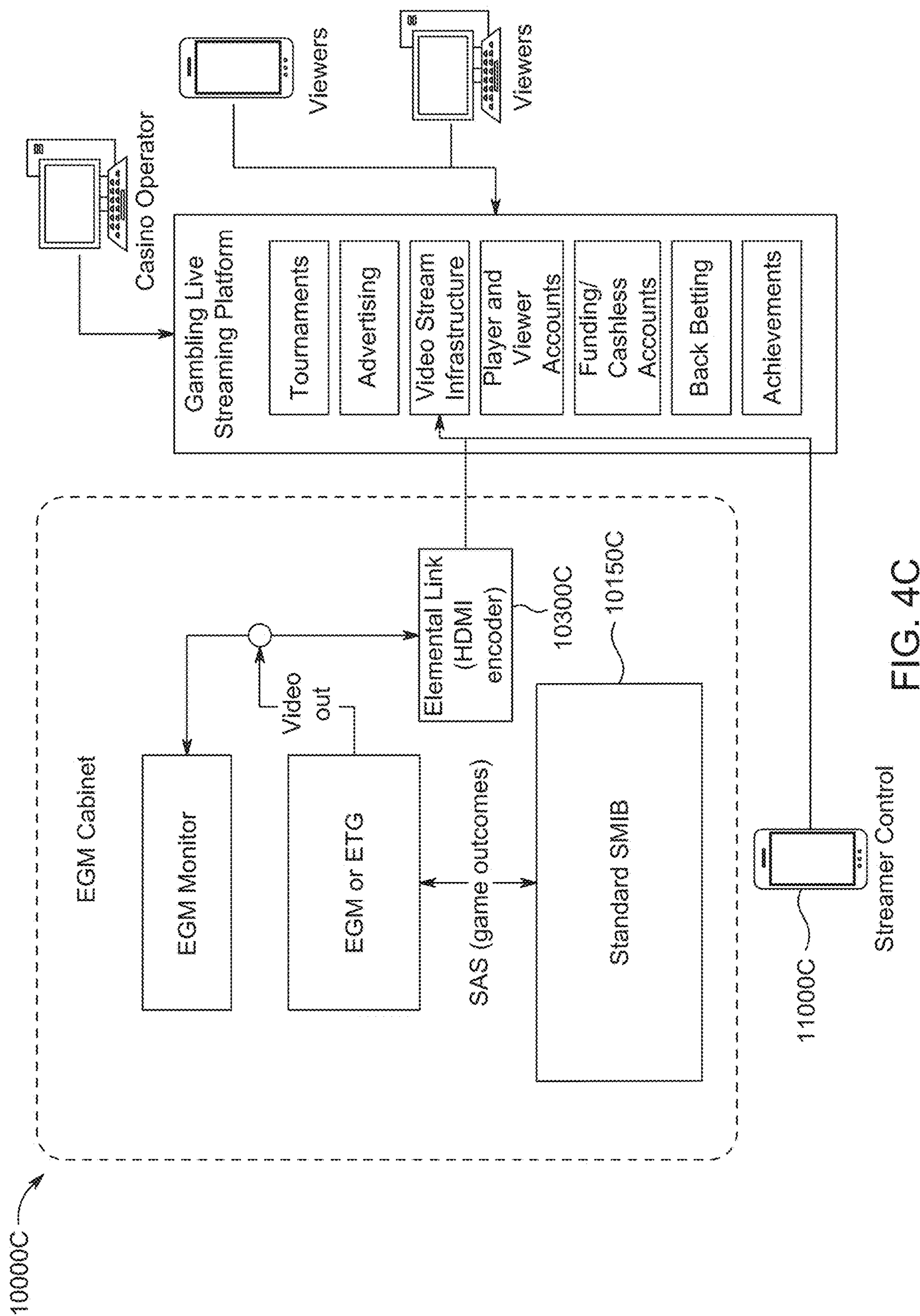
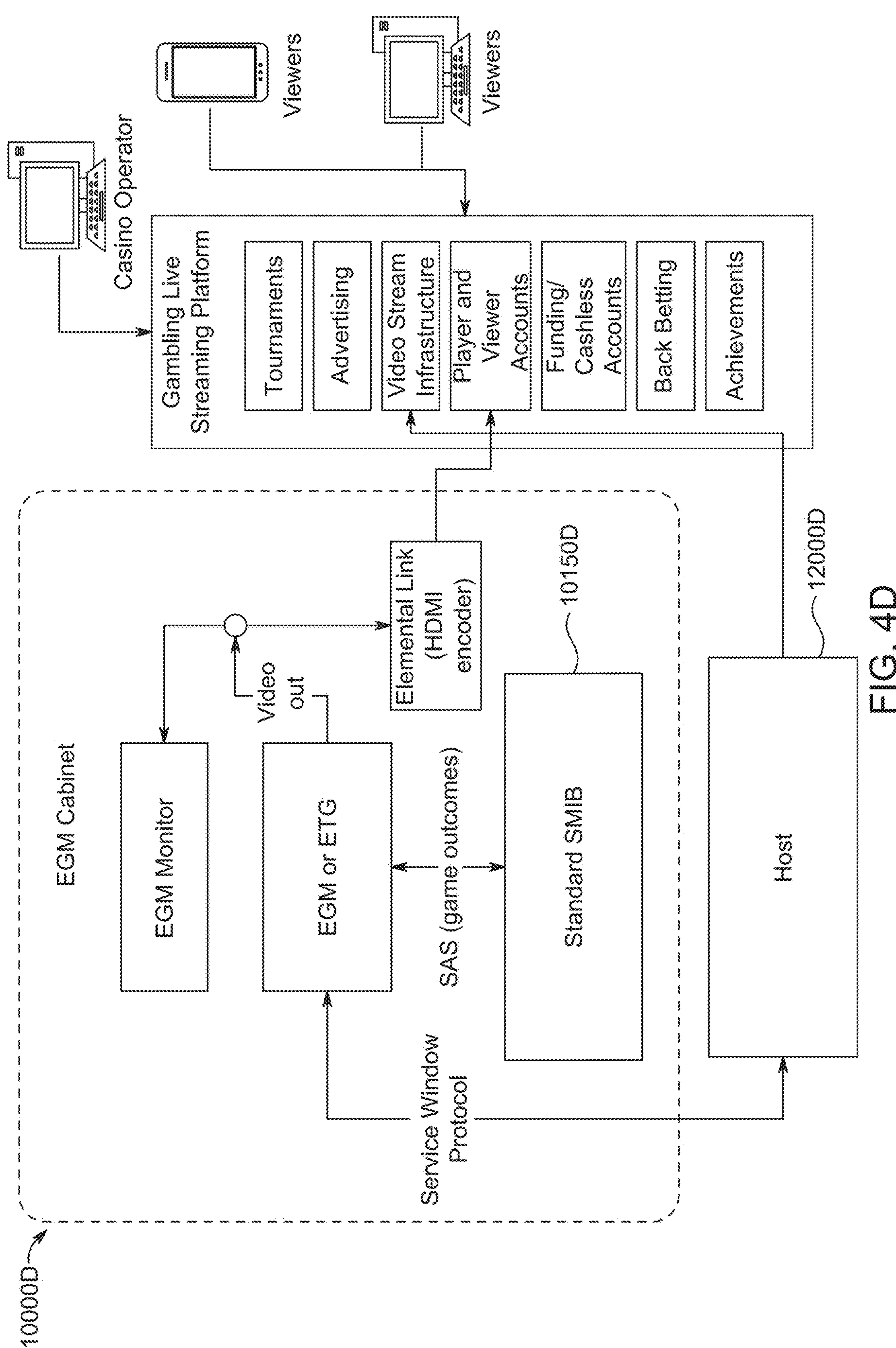


FIG. 4C





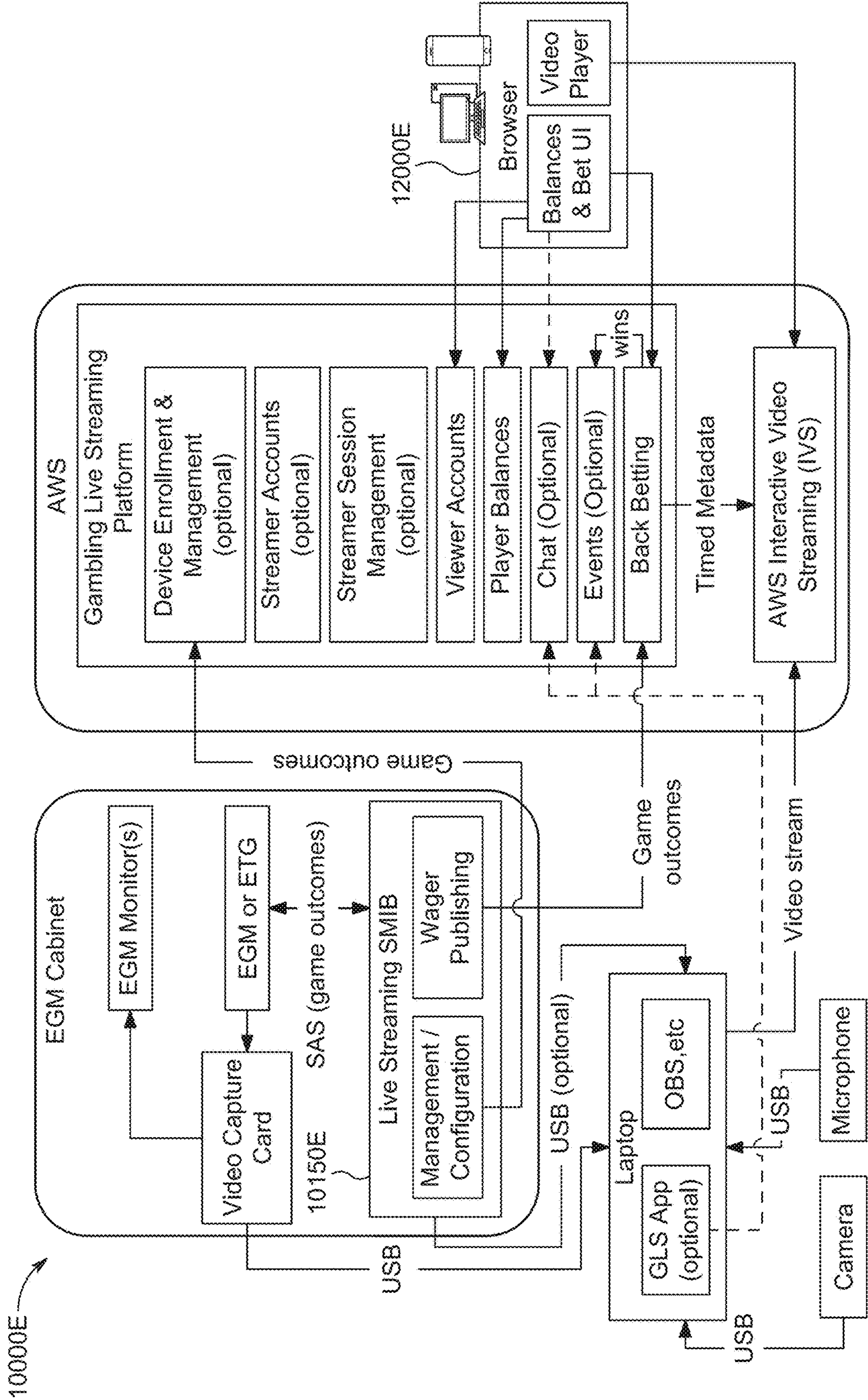


FIG. 4E



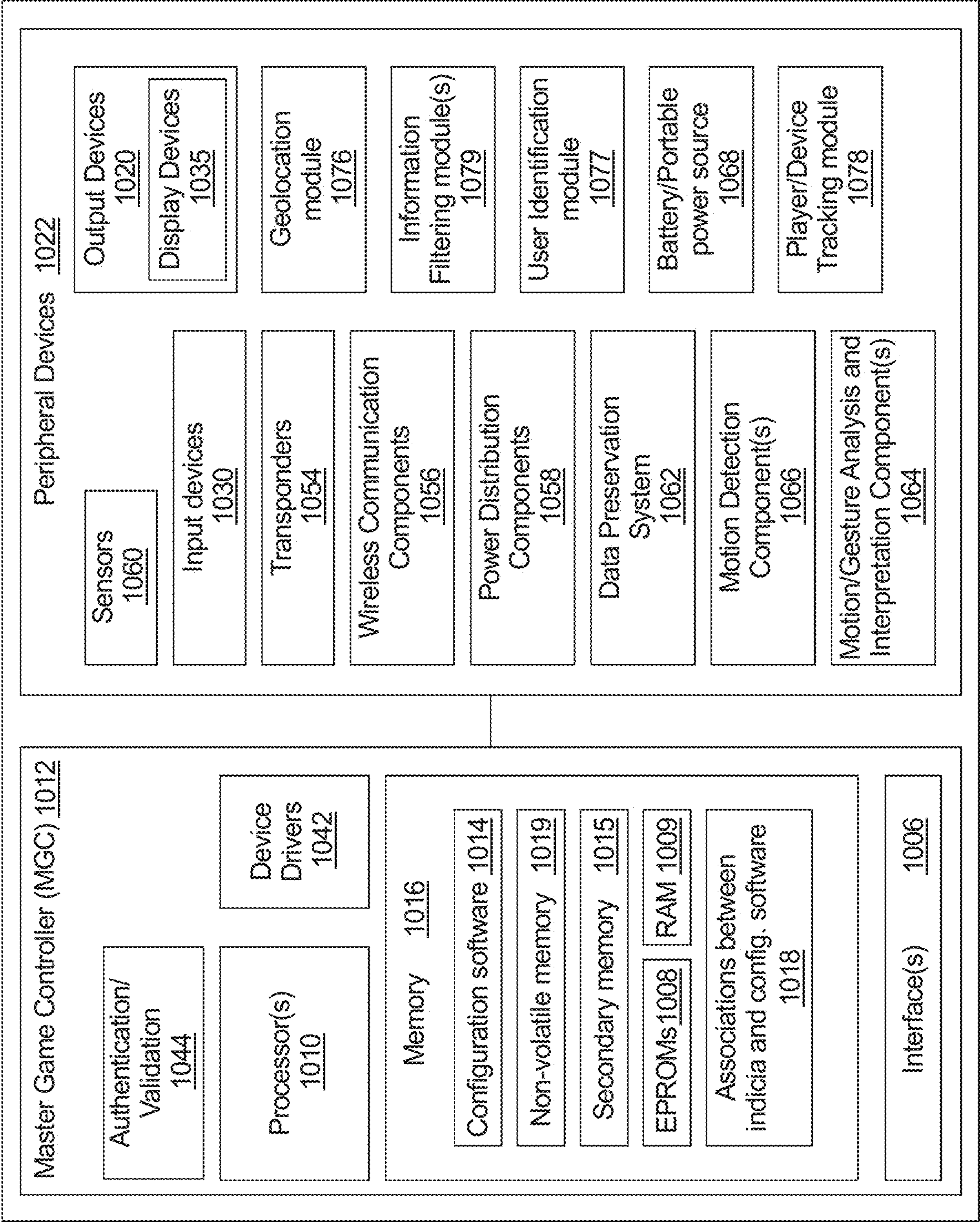


FIG. 5



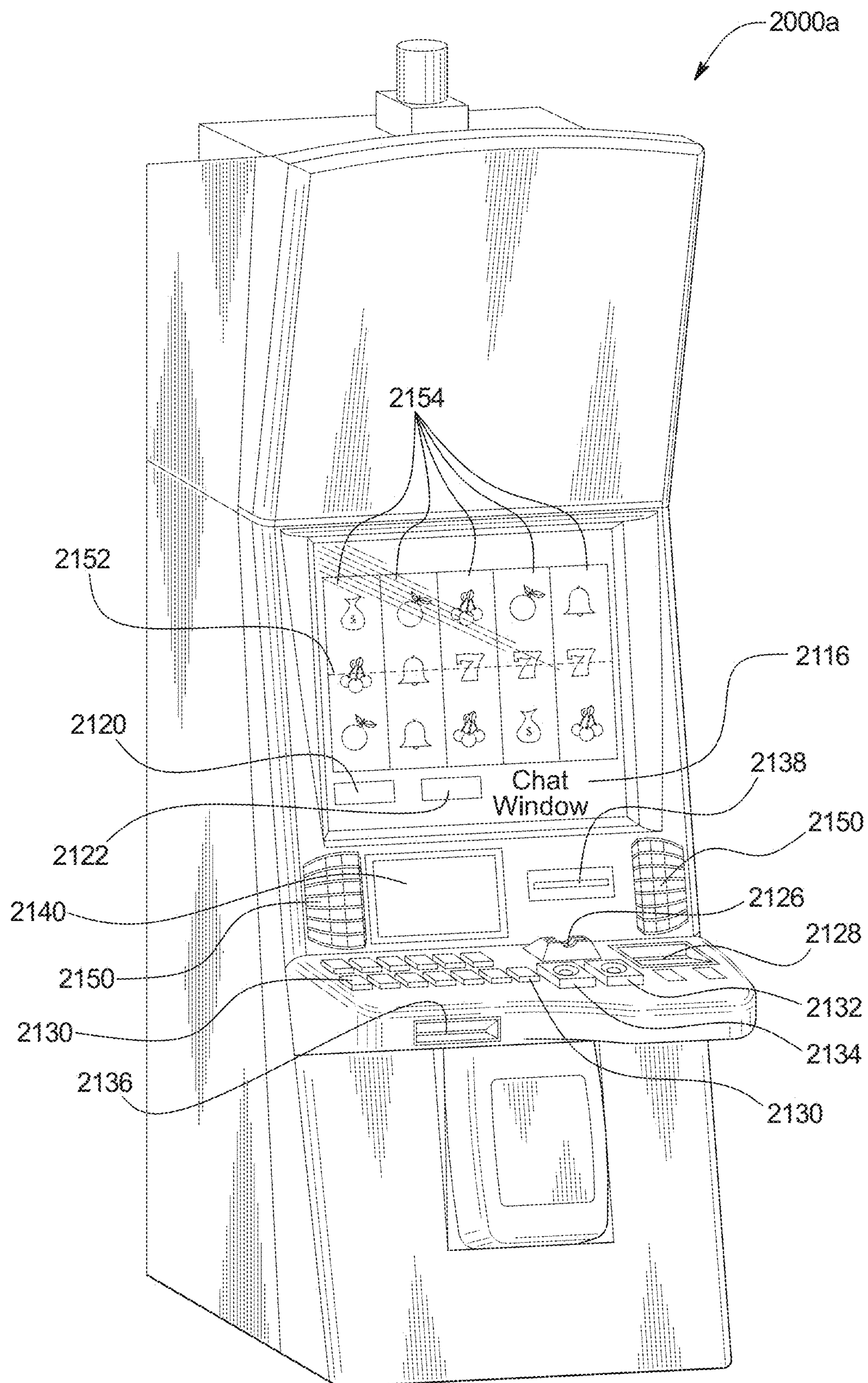


FIG. 6A

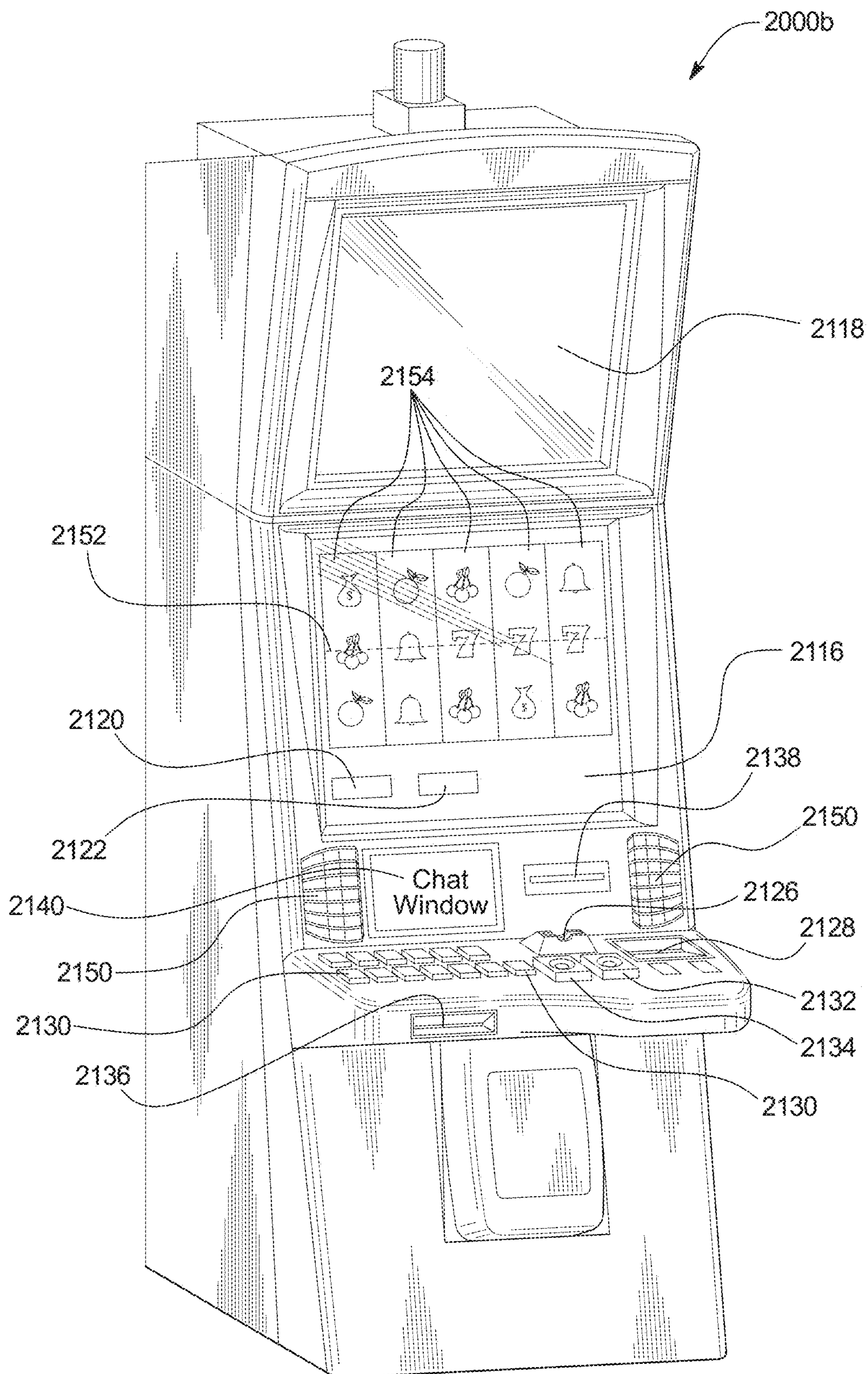


FIG. 6B



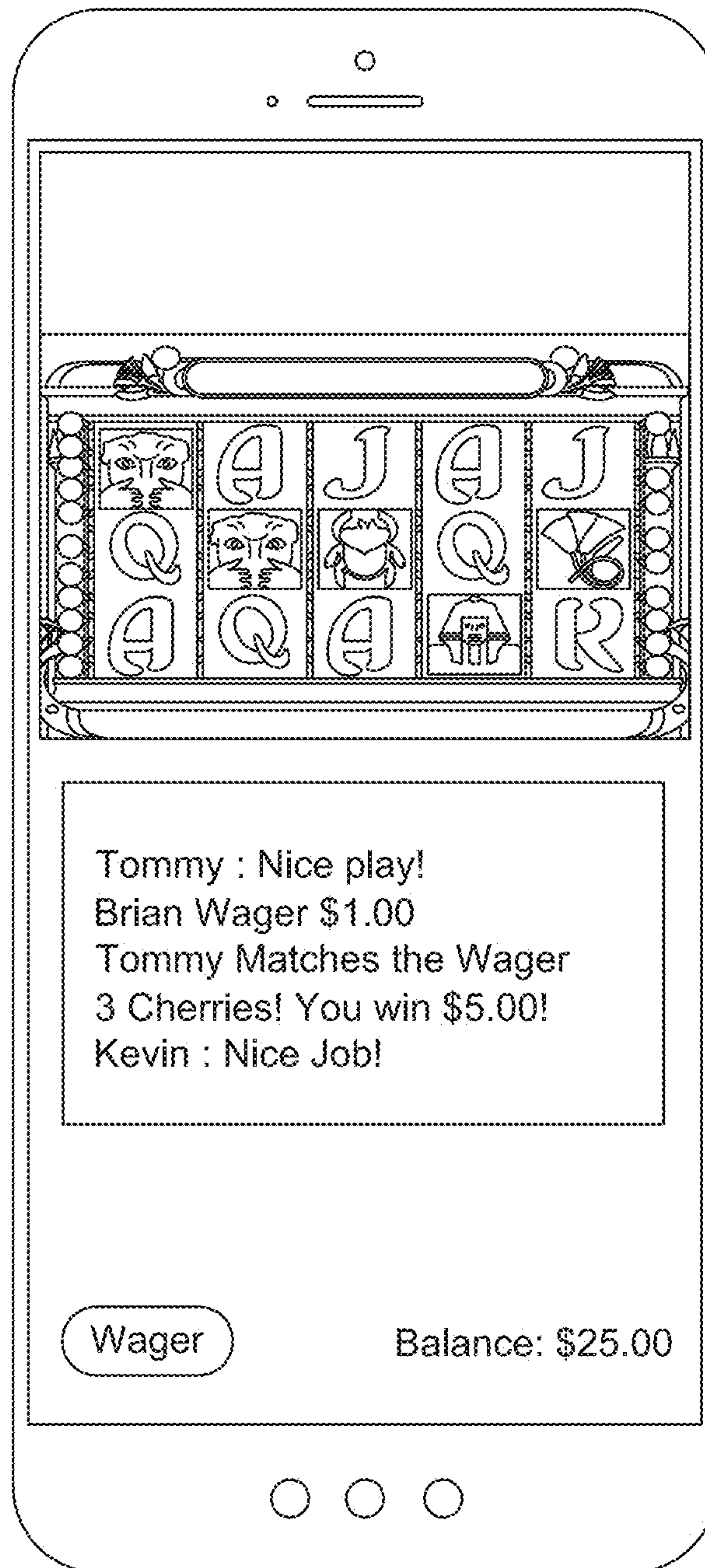


FIG. 6C



## 1

SYSTEMS AND METHODS FOR  
STREAMING IN A GAMING ENVIRONMENT

## BACKGROUND

In various embodiments, the systems and methods of the present disclosure enable a first user at a streaming device to provide a live stream of a gaming session.

Gaming machines may provide users awards in plays of primary games. Gaming machines may require the user to place a wager to activate a play of a primary game. The award may be based on the user obtaining a winning symbol or symbol combination and on the amount of the wager. Gaming machines may also provide users awards in plays of secondary games.

## BRIEF SUMMARY

In various embodiments, the present disclosure relates to an electronic gaming machine including: a cabinet; a live streaming slot machine interface board supported by the cabinet; a video camera supported by the cabinet and communicatively connected to the slot machine interface board, the video camera configured to capture video of a streamer and to communicate signals representing the captured video to the slot machine interface board; a microphone supported by the cabinet and communicatively connected to the slot machine interface board, the microphone configured to capture audio of the streamer and to communicate signals representing the captured audio to the slot machine interface board; a display device supported by the cabinet, configured to display plays of a wagering game, and configured to additionally display the captured video of the streamer; and a sound producing device supported by the cabinet and configured to produce sounds of the plays of the wagering game.

In various other embodiments, the present disclosure relates to an electronic gaming machine including: a cabinet; a live streaming slot machine interface board supported the cabinet; a video camera supported by the cabinet and communicatively connected to the slot machine interface board, the video camera configured to capture video of a streamer and to communicate signals representing the captured video to the slot machine interface board; a microphone supported by the cabinet and communicatively connected to the slot machine interface board, the microphone configured to capture audio of the streamer and to communicate signals representing the captured audio to the slot machine interface board; a main display device supported by the cabinet and configured to display plays of a wagering game; a sound producing device supported by the cabinet and configured to produce sounds of the plays of the wagering game; and an auxiliary display device supported by the cabinet and configured to display the video of the streamer captured by video camera.

In various other embodiments, the present disclosure relates to an electronic gaming machine including: a cabinet; a live streaming slot machine interface board supported by the cabinet; a main display device supported by the cabinet and configured to display plays of a wagering game; a sound producing device supported by the cabinet and configured to produce sounds of the plays of the wagering game; and an output port supported by the cabinet and communicatively connected to the live streaming slot machine interface board, the output port configured to connect to a communication wire connectable to a streamer's computing device and to facilitate communication of data from the live streaming slot

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machine interface board to the streamer's computing device, wherein the data represents the displays of the plays of the wagering game and the sounds of the plays of the wagering game, wherein the data is in a format that is combinable by the streamer's computing device with captured video and captured audio of the streamer to create a live stream mix of the displays of the plays of the wagering games, the sounds of the plays of the wagering game, the captured video, and the captured audio.

Additional features are described herein, and will be apparent from the following Detailed Description and the figures.

BRIEF DESCRIPTION OF THE SEVERAL  
VIEWS OF THE DRAWINGS

FIG. 1A is an example configuration of an architecture of a plurality of different components of one example embodiment of the system of the present disclosure.

FIG. 1B is an example configuration of another architecture of a plurality of different components of another example embodiment of the system of the present disclosure.

FIG. 1C is an example configuration of another architecture of a plurality of different components of another example embodiment of the system of the present disclosure.

FIG. 2 is an example graphical user interface displayable to a viewer of a client device in association with a live stream of a gaming session occurring at a streaming device in accordance with various embodiments of the present disclosure.

FIG. 3A is a diagrammatic view of a configuration of a streaming electronic gaming machine of one example embodiment of the present disclosure.

FIG. 3B is a diagrammatic view of a configuration of a streaming electronic gaming machine of another example embodiment of the present disclosure.

FIG. 3C is a diagrammatic view of a configuration of a streaming electronic gaming machine of another example embodiment of the present disclosure.

FIG. 3D is a diagrammatic view of a configuration of a streaming electronic gaming machine of another example embodiment of the present disclosure.

FIG. 3E is a diagrammatic view of a configuration of a streaming electronic gaming machine of another example embodiment of the present disclosure.

FIG. 3F is a diagrammatic view of a configuration of a streaming electronic gaming machine of another example embodiment of the present disclosure.

FIG. 3G is a diagrammatic view of a configuration of a streaming electronic gaming machine of another example embodiment of the present disclosure.

FIG. 3H is a diagrammatic view of a configuration of a streaming electronic gaming machine of another example embodiment of the present disclosure.

FIG. 3I is a diagrammatic view of a configuration of a streaming electronic gaming machine and associated streamer equipment of another example embodiment of the present disclosure.

FIG. 3J is a diagrammatic view of a configuration of a streaming electronic gaming machine, associated streamer equipment, and a viewer of another example embodiment of the present disclosure.

FIG. 4A is a diagrammatic view of a configuration of a streaming system of another example embodiment of the present disclosure.



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FIG. 4B is a diagrammatic view of a configuration of a streaming system of another example embodiment of the present disclosure.

FIG. 4C is a diagrammatic view of a configuration of a streaming system of another example embodiment of the present disclosure.

FIG. 4D is a diagrammatic view of a configuration of a streaming system of another example embodiment of the present disclosure.

FIG. 4E is a diagrammatic view of a configuration of a streaming system of another example embodiment of the present disclosure.

FIG. 5 is a schematic block diagram of one embodiment of an electronic configuration of an example electronic gaming machine of the present disclosure.

FIGS. 6A and 6B are perspective views of example alternative embodiments of an electronic gaming machine of the present disclosure.

FIG. 6C is a front view of an example personal gaming device of the present disclosure.

## DETAILED DESCRIPTION

In various embodiments, the systems and methods of the present disclosure enable a first user at a streaming device to create and provide a live stream via a live streaming platform, and to potentially realize one or more benefits in association with one or more events associated with the live stream in the live streaming platform. The systems and methods of the present disclosure also enable one or more second users at one or more client devices to participate in the live stream of the live streaming platform.

In various embodiments, the present disclosure is directed to a system including various components and/or sub-systems that operate individually and/or collectively to enable a first user to create, configure, capture, participate in, and transmit a live stream of their gaming experience, and to potentially reap certain benefits (such as but not limited to being in the form of awards, notoriety, and interactions with other users) associated with such participation.

In various such embodiments, the various components and/or sub-systems operate individually and/or collectively to capture live stream data and upload the captured live stream data. The various components and/or sub-systems additionally or alternatively operate individually and/or collectively to enable one or more second users to view and/or interact with the captured live stream and/or a modification of the captured live stream to also potentially reap certain benefits (such as but not limited to being in the form of awards, notoriety, and interactions with other users).

In various embodiments, the live streaming system of the present disclosure employs a streaming device, such as a streaming electronic gaming machine, which enables a first user (e.g., a streamer or an influencer) to participate in one or more gaming sessions. Example streaming devices in accordance with the present disclosure are described below.

In various embodiments, the live streaming system of the present disclosure further employs a client device, such as a viewing electronic gaming machine or a viewing personal gaming device, which enables a second user (e.g., a viewer or a follower) to view, interact with, and/or participate in the one or more gaming sessions occurring at the streaming device. In such embodiments, the streaming device communicates data associated with the gaming sessions and/or data associated with the first user that is independent of the gaming sessions to one or more components of a live streaming platform. The one or more components of the live

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streaming platform utilize the communicated data to offer one or more of various different features and functions to the second users at the client devices.

In various embodiments, the streaming device and/or the client device each comprise an electronic gaming machine (“EGM”) including, but not limited to, a slot machine, a video poker machine, a video lottery terminal, a terminal associated with an electronic table game, a terminal associated with a live table game, a video keno machine, a video bingo, and/or a sports betting terminal (that offers wagering games and/or sports betting opportunities). In certain such embodiments, the EGM operating as the streaming device interacts with the live streaming platform to facilitate the live streaming system of the present disclosure as well as foster any interactions between a user of the EGM and/or one or more viewers. In these embodiments, the EGM communicates data regarding one or more aspects of a gaming session to one or more components of the live streaming platform which operate to publish content to zero, one, or more client devices.

For example, as seen in FIG. 1A, the system employs an EGM **102** as a streaming device that includes or is otherwise associated with a live streaming platform manager **104** that interacts with the live streaming platform **106** to enable a live stream of one or more events occurring in association with the streaming EGM and/or interactions between the streaming EGM and one or more client devices **108a**, **108b**, and **108c**. Various example streaming devices including various example streaming EGMs of example embodiments of the present disclosure are described below with reference to FIGS. 3A to 3J. As further described below, these streaming devices can be configured in various manners in accordance with the present disclosure. The various different example streaming devices such as the streaming EGMs disclosed herein enable various features of the various embodiments of the present disclosure as described herein.

In various embodiments, the streaming device and/or the client device includes a component of a gaming establishment management system in communication with an EGM, such as a slot machine interface board (“SMIB”) in communication with an EGM. In certain such embodiments, the component of the gaming establishment management system operating as the streaming device interacts with the live streaming platform to facilitate the live streaming system of the present disclosure as well as foster interactions between a user of the EGM and/or one or more viewers. In these embodiments, the component of the gaming establishment management system receives data from the EGM regarding one or more aspects of a gaming session of the EGM, and communicates part or all of such data to one or more components of the live streaming platform which operate to publish content to zero, one, or more client devices.

For example, as seen in FIG. 1B, the system employs a streaming SMIB **150** that operates with an EGM **102** to capture data associated with the EGM **102** and interact with the live streaming platform **106** to enable a live stream of one or more events occurring in association with the EGM and/or interactions between the streaming SMIB (and/or associated EGM) and one or more client devices **108a**, **108b**, and **108c**. In various embodiments, the SMIB associated with an EGM is positioned in the cabinet of the EGM such as indicated in FIG. 1B.

In various other embodiments, the streaming device and/or the client device comprises a personal gaming device. In certain such embodiments in which the personal gaming device operates as the streaming device, the personal gaming device operates with a remote game server to offer one or



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more plays of one or more games independent of any EGM and any SMIB associated with the EGM. In certain such embodiments, the personal gaming device and/or remote game server interacts with the live streaming platform to facilitate the live streaming system of the present disclosure as well as foster interactions between a user of the personal gaming device and/or one or more viewers. In these embodiments, the personal gaming device and/or remote game server communicate data regarding one or more aspects of a gaming session to one or more components of the live streaming platform that operate to publish content to zero, one, or more client devices.

For example, as seen in FIG. 1C, the system employs a remote game server **170** that operates with a personal gaming device **172**, such as a mobile device or a personal computer, and a remote gaming platform **174** (that interacts with the live streaming platform **106**) to enable, via an internet browser or application **176** of the personal gaming device, a live stream of one or more events occurring in association with the personal gaming device **172**, one or more events occurring in association with the remote game server **170**, and/or one or more interactions between the personal gaming device **172** and one or more client devices **108a**, **108b**, and **108c**.

In various embodiments, upon an occurrence of a user identification event, the system enables a user at a streaming device to log into a live streaming platform account associated with the user. In different embodiments, the user logs into a live streaming platform account via one or more of: the user inserting a live streaming platform identification card (that has an encoded user identification number that uniquely identifies the user) into a card reader of the streaming device; the user inserting a player tracking card that functions as a live streaming platform identification card (that has an encoded user identification number that uniquely identifies the user) into a card reader of a streaming device; an establishment of a wireless communication link between the streaming device and a mobile device executing an application associated with an identified user; the utilization of any suitable biometric technology or ticket technology to identify a user associated with a gaming session occurring at a streaming device.

In various embodiments, with reference to FIG. 1A, wherein the system includes or is otherwise in communication with a gaming establishment player tracking system **110** of a gaming establishment customer management system **112**, the user identification occurs in association with a user logging into the player tracking system from an EGM **102**. In this embodiment, the EGM communicates the user identification data to one or more components of the live streaming platform **106** (e.g., a server of the live streaming platform) that log the user into a live streaming account **114** associated with the user and maintained in association with the live streaming platform. In various embodiments wherein the system is separate from and not in communication with a gaming establishment player tracking system, the user identification occurs in association with a user logging into the live streaming platform from the streaming device (such as by the user entering an identification and password or login code at the streaming device). In this embodiment, the streaming device communicates the user identification data to one or more components of the live streaming platform that log the user into the live streaming account associated with the user.

In various embodiments, in association with a user logging into a live streaming platform account of the live streaming platform from a streaming device, the system

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enables the user to enable/disable certain components of the streaming device. In various embodiments, in association with a user logging into a live streaming platform account of the live streaming platform from a streaming device, the system enables the user to modify the settings or parameters of certain components of the streaming device. In these embodiments, such as seen in FIGS. 1A, 1B, and 1C, as part of configuring the streaming device to operate with the live streaming platform, the system utilizes a live streaming platform user interface **116** to enable a user to modify zero, one, or more aspects of the streaming device as they relate to how the streaming device operates with the live streaming platform.

In various such embodiments, the system enables the user to modify the use of one or more display devices of the streaming device and/or one or more display devices separate from, but associated with, the streaming device. For example, the system enables the user to enable or disable one or more display devices of the streaming device from displaying the images captured by the streaming device that are displayed to the viewers. In other example embodiments, the system additionally or alternatively enables the user to modify the settings of the display device(s) of the streaming device, such as modifying the screen layout of the streaming device by selecting an area of the display device to display the live stream displayed to the viewers, or modifying whether to utilize a split screen to display the live stream displayed to the remote users.

In other such embodiments, the system enables the user to modify the use of one or more cameras of the streaming device and/or one or more cameras separate from, but associated with, the streaming device. For example, as seen in FIGS. 1A, 1B, and 1C, since one or more cameras **118** of the streaming device can be used to capture data of the user playing the streaming device, the system enables the user to enable or disable the camera(s) of the streaming device from capturing one or more images of the user playing the streaming device. In other example embodiments, the system additionally or alternatively enables the user to modify the settings of the camera(s) of the streaming device, such as modifying the resolution of the camera, modifying the color settings of the camera (e.g., to capture images in color or black and white), and/or modifying the use of a green screen (or similar type screen).

In various embodiments, the system enables the user to modify the use of one or more sound generating devices, such as speakers, of the streaming device and/or one or more sound generating devices separate from, but associated with, the streaming device. For example, since one or more speakers of the streaming device can be used to generate sounds communicated from one or more viewers at one or more client devices, such as comments made by one or more viewers, the system enables the user to enable or disable the speaker(s) of the streaming device. In another example, the system additionally or alternatively enables the user to modify the settings of the speaker(s) of the streaming device, such as modifying the volume of the speakers.

In various embodiments, the system enables the user to modify the use of one or more sound capture devices, such as microphones, of the streaming device and/or one or more sound capture devices separate from, but associated with, the streaming device. For example, since one or more microphones of the streaming device can be used to capture the sounds at the streaming device, such as comments made by the user, the system enables the user to enable or disable the microphone(s) of the streaming device. In another example, the system additionally or alternatively enables the



user to modify the settings of the microphone(s) of the streaming device, such as modifying the sensitivity of the microphone(s).

In various embodiments, in addition to or alternatively from modifying the settings of one or more components of the streaming device and/or components separate from, but associated with, the streaming device, the system enables a user to connect or otherwise pair a peripheral device with the streaming device and utilize the connected peripheral device in association with the capturing of data for the live stream. That is, the system of these embodiments can enable the user to connect one or more peripherals to the streaming device to further enhance the broadcasting experience.

In various embodiments, the peripheral device includes a mobile device (with or without a camera) wherein the system enables a user to wirelessly connect or otherwise pair the mobile device to the streaming device such that the user can interact with their audience of viewers using the mobile device. In one such embodiment, the wireless communication link includes a direct pairing such that when the user of the mobile device is currently located at or otherwise engaging with a streaming device, a direct pairing or linkage occurs between the mobile device and the streaming device utilizing one or more wireless communication protocols, such as Bluetooth™ signals, Bluetooth™ Low Energy (“BLE”) signals, one or more cellular communication standard (e.g., 3G, 4G, 5G, 6G, LTE) signals, one or more Wi-Fi compatible standard signals and/or one or more short range communication signals, such as near field communication (“NFC”) signals protocol). In another such embodiment, the wireless communication link includes an indirect pairing such that when the user of the mobile device is currently located at or otherwise engaging with a streaming device and wirelessly connected to one or more servers, such as servers of a gaming establishment, an indirect pairing or linkage occurs between the mobile device and the streaming device via the one or more servers. In another embodiment, in addition to or alternative from using the mobile device as a peripheral device associated with the streaming device, the system enables the user to utilize a paired mobile device (that is running a mobile device application configured to interface with the streaming device) to display a live streaming platform user interface such that the user can adjust one or more settings on the streaming device which pertain to the live stream.

In various embodiment, the peripheral device includes a headset (including a microphone) wherein the system enables a user to connect or otherwise pair the headset (e.g., headset audio interface **120** of FIGS. 1A, 1B, and 1C) to the streaming device such that the user can speak with their audience of viewers at client devices. In this example, if the headset is a wired headset, the system enables the user to connect to the streaming device over USB Audio, standard analog headphone and speaker jacks, or optical inputs and outputs. On the other hand, if the headset is a wireless headset, the system enables the user to connect to the streaming device via establishing a wireless communication link with the headset. In these embodiments, if the peripheral device requires a power source, the system further enables the user to power such connected peripheral devices via one or more USB power outlets and/or wireless charging devices.

In various embodiments, in addition to enabling a user to connect a peripheral device to the streaming device, the system adjusts one or more settings of the streaming device responsive to the detection of a connected peripheral device. For example, upon the streaming device detecting that

headphones are connected, the system mutes one or more speakers of the streaming device and routes one or more sound outputs to the headphones so that the risk of echo when the user is speaking into their headphone microphone is minimized. In one such example, the system routes all sound outputs to the headphones. In another such example, the system routes certain sound outputs to the headphones but continues routing other sound outputs, such as sounds associated with large jackpots, sounds occurring during certain in-game bonuses, or other sounds that contribute to the general ambiance of the gaming establishment for exciting events, to the speakers of the streaming device.

It should be appreciated that while certain adjustments to one or more components of the streaming device occur in association with a user logging into a live streaming platform account of the live streaming platform, in various embodiments, one or more adjustments to one or more components of the streaming device occur based on the live stream of the user’s gaming session. In these embodiments, the streaming device displays (either continuously or responsive to one or more inputs made by the user during the user’s gaming session) one or more live streaming platform user interfaces that enable the user to change one or more configurations of the streaming device that pertain to the broadcasted live stream of the user’s gaming session. For example, since one or more display devices of the streaming device and/or speakers of the streaming device can be utilized to provide the user the live stream that is broadcasted to one or more viewers at client devices, the system gives the user of the streaming device instant feedback and enables the user to modify one or more settings of any suitable component utilized to produce the live stream, such as a camera of the streaming device, a camera paired with the streaming device, a microphone of the streaming device, or a microphone paired with the streaming device.

In various embodiments, in addition to or alternatively from adjusting one or more settings of the streaming device based on the feedback of the user, the system displays to the user certain information regarding the user’s live stream to provide the user at the streaming device a more immersive experience to foster more interaction with the viewers at the client devices. For example, the streaming device utilizes a user feedback display to display to the user statistics about how many viewers are viewing the user’s play online at the current point in time. In another example, the streaming device utilizes a user feedback display to inform the user at the streaming device of the current live chat associated with the user’s gaming session so that they user can respond (using a microphone to provide comments and/or answer requests from viewers). In another example, the streaming device utilizes a user feedback display to display non-game play statistics for the play session, such as total gifts given, gifts given to charity, or any award given to the user by viewers. In different embodiments, the system displays none, part, or all of the information of this user feedback display to the viewers of the live stream.

In various embodiments, following the occurrence of the user identification event and any modifications to any components of (or associated with) the streaming device, one or more components of the system of the present disclosure monitor for an occurrence of a capture event that potentially results in the generation of content to be streamed to one or more viewers at one or more client devices. In these embodiments, responsive to an occurrence of a capture event, the system captures live stream data associated with the gaming session occurring at the streaming device. In various embodiments, the live stream data comprises audio/visual



content generated by the streaming device and/or captured by the streaming device. In various embodiments, the live stream data additionally or alternatively comprises streaming device data associated with the gaming session and/or the streaming device, such as, but not limited to, meter data (e.g., money in, money out, money wagered, money won), configuration data (e.g., manufacturer, denomination, payable data), bonusing data (e.g., progressive win, system bonus win), ticket in/ticket out data, and/or cashless fund transfer data.

In various embodiments, the system captures the content generated by the streaming device, such as content displayed by one or more display devices of the streaming device, to broadcast to the viewers (with the possible addition of supplemental content). In another such embodiment, the system captures certain content generated by the streaming device, such as content displayed by areas or windows of one or more display devices of the streaming device, to broadcast to the viewers (with the possible addition of supplemental content). In this embodiment, rather than displaying to the viewers all the content that the user at the streaming device sees (that may include external controlled interface content personal to the user or other sensitive content not intended to be broadcasted), the system captures certain content, such as a game play content, and does not capture certain other content.

In various embodiments, following the capture of live stream data, the system determines whether a captured data modification event has occurred. That is, after obtaining the data associated with the content generated by the streaming device that forms at least part of the live stream and prior to enabling any viewers access to that particular captured data of the live stream, the system determines whether to one or more events have occurred to augment such content by changing part of the content, removing part of the content and/or adding to the content.

If the system determines that a captured data modification event occurred, the system modifies the live stream data captured from the streaming device. In other words, upon an occurrence of a modification event and prior to enabling any viewers access to that particular captured data of the live stream, the system modifies or otherwise alters the data captured from the streaming device to supplement the live stream with additional information. In various embodiments, supplemental content derived from this additional information is added to the live stream by overlaying the supplemental content onto a captured frame of a display device of the streaming device and/or separately displaying the supplemental content along with a captured frame of a display device of the streaming device such that the live stream includes audio-visual content of the user's gaming session as well as the additional information.

In various embodiments, the additional information utilized to form the supplemental content added to the live stream includes one or more of: still images (e.g., a photograph of a user's reaction during a play of a game), video clips (e.g., a video of a user's reaction to a play of a game), sound clips (e.g., a user's verbal reaction to a play of a game), augmented still images (e.g., an augmented photograph of a user's reaction during a play of the game, such as the user's reaction modified via one or more filters or superimposed with an outcome of a play of the game), augmented video clips (e.g., an augmented video recording of a user's reaction to a play of a game), augmented sound clips (e.g., a user's augmented verbal reaction to a play of a game), audio-video clips, text, non-wagering transaction information associated with the user (e.g., an amount spent

purchasing goods at a gaming establishment's luxury clothing store), location information, application usage information, event attendance information, and/or biometric information. In various embodiments, the system informs the user of the publication of this additional information. In certain of such embodiments, the system enables the user to opt-out of (or alternatively opt-into) this feature as well as enables the user to configure notifications of when such additional information is to be published.

In various embodiments, the additional information utilized to form the supplemental content added to the live stream includes details about the user's current (or historical) gaming session, such as, but not limited to, a largest award amount won in the gaming session, a duration of the gaming session, an average amount wagered for the gaming session, a total amount wagered for the gaming session, a total amount won for the gaming session, an average amount won for the gaming session, and/or any jackpots won for the gaming session.

In various embodiments, the additional information utilized to form the supplemental content added to the live stream includes details about one or more tournaments the user is currently participating in (or historically participated in). In various such embodiments, multiple users participate in a gaming establishment tournament where users compete to determine who will win the tournament and one or more users in the tournament stream their play live using the live streaming platform of the present disclosure. For example, the system offers a tournament to eligible viewers (e.g., viewers that pay a fee or have a relationship with the user of a streaming device) in which wagers are placed by client devices over a period of time and the client device with the largest win at the end of the period is the winner of the tournament. In such a configuration, the live streaming platform is linked to the system running the tournament and tracking the score of the streaming devices that are participating. The live streaming platform uses the data published by the tournament system, such as a tournament manager server (e.g., a component of a tournament management system **122** in communication with the streaming device of FIG. **1A**), to display additional information regarding any streamed tournaments (e.g., tournaments **124** offered in association with the live streaming platform of FIGS. **1A**, **1B**, and **1C**). Such additional information includes, but is not limited to, a current leaderboard of the tournament, a current standing in the tournament (i.e., the user's current position on the leaderboard of the tournament), a largest award amount won in the tournament, a duration of the tournament, an average amount wagered in the tournament, a total amount wagered in the tournament, a total amount won in the tournament, an average amount won in the tournament, and/or any jackpots won in the tournament.

In various embodiments, the additional information utilized to form the supplemental content added to the live stream includes details about any achievements earned or otherwise associated with the user and/or the user's current (or historical) gaming session. In this embodiment, the system utilizes game outcome data published by the streaming device to the live streaming platform to associate the user of the streaming device (and/or the user of the client device) with one or more achievements such as badges, avatars, access to one or more emojis, awards (in the form of monetary credits, non-monetary credits, physical goods, and/or any award of the present disclosure). The system causes information about such achievements (e.g., achievements **126** maintained in association with the live streaming platform of FIGS. **1A**, **1B**, and **1C**) to be overlaid onto or



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displayed along with the captured frames. In different embodiments, such achievements are earned or otherwise associated with the user based on the historical play statistics of the user and/or the historical play statistics of the user relative to the historical play statistics of one or more other users (to determine how each user has relatively performed during one or more gaming sessions). It should be appreciated that while such achievements may be based on game outcome data of a wager amount and any awards, game outcome data may additionally be based on any trackable event occurring in association with a play of a game (e.g., for a play of poker game, the game outcome data includes the hand of playing cards initially dealt, the playing cards held by the user, the final hand of playing cards, and any associated award), or occurring independent of any play of any game but otherwise associated with the user's gaming session.

In various embodiments, the additional information utilized to form the supplemental content added to the live stream includes details about a quantity of viewers currently viewing the user's gaming session. In another such embodiment, the additional information includes historical details about a quantity of historical viewers who has viewed the user's historic gaming sessions. In another embodiment, the additional information utilized to form the supplemental content added to the live stream includes details about a quantity of views of the user's gaming session. In another such embodiment, the additional information includes historical details about a quantity of historical views of the user's historic gaming sessions. In another embodiment, the additional information utilized to form the supplemental content added to the live stream includes details about a quantity of viewers following the user (i.e., a number of followers of the user). In another embodiment, the additional information utilized to form the supplemental content added to the live stream includes details about a quantity of subscribers associated with the user.

In various embodiments, the additional information utilized to form the supplemental content added to the live stream includes details about any gifts or awards sent to the user of the streaming device by one or more viewers of one or more client devices. In this embodiment, viewers can send monetary gifts to users as a virtual "thank you" for playing well, or performing some action requested by a viewer, wherein the system displays such gifts (either individually or collectively) such that the viewers see the live stream of the user's gaming session as well as information regarding such gifts. For example, a viewer congratulates the user for earning a royal flush in a poker game by gifting them \$5. In another example, a viewer requests, through an online chat, that the user hold certain cards in a poker hand by gifting the user some amount of money. In another embodiment, one or more gifts given to users participating in the tournament by viewers impact a user's position in an ongoing tournament. For example, if a user has a credit meter balance of \$500 after two minutes of play, and they are currently ranked 3<sup>rd</sup> on the leaderboard, and an online viewer gifts that user \$200, then the user may jump into 2<sup>nd</sup> place on the leaderboard. It should be appreciated that these gifts are funded by electronic credits that viewers establish with the live streaming platform. That is, as seen in FIGS. 1A, 1B, and 1C, the system of the present disclosure utilizes accounts associated with viewers **128** that are maintained by one or more components of the live streaming platform and/or one or more components independent of but associated with the live streaming platform. The system employs such accounts to transfer funds to one or more digital

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accounts or electronic wallets (e.g., gaming establishment account **130** of FIG. 1A) and/or to one or more components of a gaming establishment fund management system that maintain one or more gaming establishment accounts, such as cashless wagering accounts, associated with such users. In different embodiments, such funds are transferred from an account associated with the viewer to an account associated with the user, from an account associated with the viewer to a cashless wagering account maintained for the user by a cashless wagering system of a gaming establishment, and/or from an account associated with the viewer to a credit balance of the streaming device (wherein such transfers are recorded using existing wagering account transfer or bonus meters tracked by a streaming device, or view additional meters added to track such transfers). In another embodiment, such funds are transferred from an account associated with a viewer to the streaming device wherein rather than such funds directly modifying a credit balance of the streaming device, such funds contribute to one or more game outcomes determined by the streaming device (e.g., a gift of \$5 from a viewer is provided to the user at the streaming device as an award of \$5 associated with a game outcome determined in association with a play of a game). It should be appreciated that any suitable digital wallet or account which maintains or is otherwise associated with an amount of funds for a user at a streaming device and/or a viewer may be utilized in association with the present disclosure.

In various embodiments, the additional information utilized to form the supplemental content added to the live stream includes details about any gifts provided to any charities associated with the user of the streaming device by one or more viewers at one or more client devices. In certain such embodiments, viewers can send monetary gifts to a charity of the user's choosing as a virtual "thank you" for playing well, or performing some action requested by a viewer, wherein the system displays such charitable gifts (either individually or collectively) such that the viewers see the live stream of the user's gaming session as well as information regarding such gifts. For example, a viewer congratulates the user for playing for a certain amount of time by providing a gift of \$50 to a charity designated by the user. It should be appreciated that the charitable gift given by a viewer is funded by transferring money from an account that viewer established with the live streaming platform to one or more financial institution accounts associated with the charity and maintained by one or more financial institutions.

In various embodiments, the additional information utilized to form the supplemental content added to the live stream includes advertising data associated with a gaming establishment wherein the streaming device is located and/or a third party. For example, as seen in FIGS. 1A, 1B, and 1C, the streaming device broadcasting the user's video stream operates with the live streaming platform **106** to encode an advertisement **132** for a gaming establishment in the video. For example, the gaming establishment advertisement includes an embedded audio/video clip, such as footage of the user at the streaming device or a promotional audio/video clip of a show attended by the user at a gaming establishment, along with attendance information regarding a user attending the show, the gaming establishment where the concert occurred and advertising text describing upcoming dates for the show. In these embodiments, the gaming establishment advertisement (and/or third party advertisement associated with the live stream) offers the viewers different benefits, such as awards, discounts, free points, free promotional credits at the gaming establishment for signing



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up for a visit to the gaming establishment, for viewing the live stream or associating the viewer's player tracking account with their viewer account. In different embodiments, different levels of activity by the viewers are associated with different benefits, wherein the benefit provided to the viewer is based on how much they watch, how many gifts they give users, or how many bets they place. In these embodiments, such benefits are funded by a gaming establishment if the gaming establishment that is hosting the user gets a percentage of the subscriptions to a user's channel, gifts, and/or bets (or a percentage of the hold associated with such bets).

In various embodiments, the additional information utilized to form the supplemental content added to the live stream includes details about an additional wager placed by the user at the streaming device. In one such embodiment, the streaming device enables users to place wagers on sporting events while at the streaming device, wherein the information regarding such sports wagers are broadcast as part of their live stream. In various embodiments, as the events associated with a sports wager made occur or finalize, the results of the sports wager are reported to the live streaming platform by the streaming device (or the sports betting system which maintains and tracks such wagers). Such reporting enables the live streaming platform to update the appropriate user statistics and possibly award the user any achievements as described above.

In various embodiments, in addition to or alternatively from modifying the live stream data captured from the streaming device with additional information, the modification of the live stream data includes removing certain of the captured live stream data or otherwise altering the captured live stream data. In these embodiments, rather than displaying to the viewers all the content that the user at the streaming device sees (that may include external controlled interface content personal to the user or other sensitive content not intended to be broadcasted), the system obscures certain content prior to being broadcasted to any viewers. For example, if a streaming device is currently displaying a live video stream associated with a sporting event in a window of a display device of the streaming device and the live streaming platform lacks the content licenses to also display the live video stream of the sporting event, the system blacks out, grays out, or otherwise masks the live video stream of the sporting event from being displayed to viewers.

Following the modification of the data captured from the streaming device or if the system determines that a captured data modification event did not occur, the system uploads the live stream data to the live streaming platform. In various embodiments, the uploaded live stream data comprises unmodified captured live stream data (e.g., unmodified audio/visual content generated by the streaming device and/or content captured by the streaming device). In certain additional or alternative embodiments, the uploaded live stream data comprises modified captured live stream data (e.g., modified audio/visual content generated by the streaming device and/or modified content captured by the streaming device). In certain additional or alternative embodiments, the uploaded live stream data comprises streaming device data associated with the gaming session and/or the streaming device. In one example in which the streaming device is an EGM, as seen in FIG. 1A, the live streaming platform manager 104 associated with the EGM uploads certain of the live stream data to a video stream infrastructure component 140 of the live streaming platform 106.

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In another example in which the streaming device includes a SMIB associated with an EGM, as seen in FIG. 1B, a live streaming application 154 being executed by the SMIB uploads certain of the live stream data to the video stream infrastructure component 140 of the live streaming platform 106. In various embodiments in which the streaming device includes a component of a gaming establishment management system, such as a SMIB associated with an EGM, to enable the streaming SMIB to capture live stream data from the EGM and communicate the live stream data to one or more components of the live streaming platform, the streaming SMIB comprises various hardware and/or software interfaces. In various embodiments, the streaming SMIB includes zero, one, or more video inputs with hardware interfaces (e.g., HDMI, DVI, VGA or Ethernet), zero, one, or more audio inputs (e.g., 3.5 mm analog input or a fiber optic input) and zero, one, or more communication interfaces (e.g., serial, Ethernet, fiber, or wireless) with the EGM. In various embodiments, the streaming SMIB includes zero, one, or more connections to one or more servers of the live streaming platform and/or one or more servers of the gaming establishment management system. In these embodiments, as seen in FIG. 1B, the streaming SMIB operates with a video capture device 152 to encode video data outputted by the EGM into one or more video formats for streaming and communicate that video data to one or more video stream infrastructure components 140 of the live streaming platform 106.

In another example embodiment in which the streaming device includes a personal gaming device operating with a remote game server, such as seen in FIG. 1C, a video capture component 178 of the personal gaming device 172 uploads certain of the live stream data to the video stream infrastructure component 140 of the live streaming platform 106. In various embodiments in which the streaming device includes a personal gaming device 172 operating with a remote game server 170 and a remote gaming platform 174 that maintains one or more user accounts and operates with the remote game server to enable wagering of plays of games with funds held in such maintained user accounts, to enable the capturing of live stream data and communication of the live stream data to one or more components of the live streaming platform, a video capture component 178 associated with the personal gaming device interfaces with zero, one, or more peripheral devices (e.g., camera 118 and headset audio interface 120) to capture certain data of the live stream. In these embodiments, the streaming personal gaming device (operating with the video capture component and employing certain data communicated from the remote game server and/or the remote gaming platform) encodes video data outputted by the personal gaming device into one or more video formats for streaming and communicate that video data to one or more video stream infrastructure components 140 of the live streaming platform 106.

Following the upload of live streaming data, the live streaming platform enables one or more viewers at one or more client devices to access the live stream data. In various embodiments, the live streaming platform enables viewers at the client devices to view the live stream and, in certain instances, interact with the streaming device. For example, as seen in FIGS. 1A, 1B, and 1C, the live streaming platform 106 enables viewers at different client devices (e.g., a mobile client device 108a, a personal client device 108b, and/or an EGM operating as a client device 108c) to view the live stream (including, but not limited to, as seen in FIG. 2, viewing a play of a game 202 and audio/video content of the user at the streaming device 204) and, in certain instances,



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interacting with the streaming device (including, but not limited to, as also seen in FIG. 2, chatting with the user at the streaming device **206** in one or more chat windows or chat rooms).

In various embodiments, the live streaming platform enables any viewer to access any live stream associated with any streaming device. In various embodiments, the live streaming platform restricts certain viewers from accessing certain live streams associated with certain streaming devices. In various embodiments, the system restricts access to certain live streams based on one or more of an age of the viewer, a location of the viewer, an age of the user, a location of the user, any regulations pertaining to the age and/or location of the viewer, and/or any regulations pertaining to the age and/or location of the user.

In various embodiments that impose one or more restrictions on viewers, the system enables a viewer to pay a fee (e.g., a daily fee, weekly fee, monthly fee, or yearly fee) to view one or more live streams and/or participate in one or more live chats. In one such embodiment, if the system requires a viewer to pay to fully participate in the live stream, then in addition to any percentage of the fees allocated to the operator of the live streaming platform (e.g., the component associated with the gaming establishment operator **134** of FIGS. 1A, 1B, and 1C), the system allocates a percentage of the fee to the user at the streaming device associated with the live stream. In another such embodiment, if the system requires a viewer to pay to fully participate in the live stream, then in addition to any percentage of the fees allocated to the operator of the live streaming platform, the system additionally or alternatively allocates a percentage of the fee to the gaming establishment where the streaming device associated with the live stream is at. In this embodiment, if the live streams associated with a user occurred via the user playing multiple streaming devices at multiple gaming establishments, the system splits the fees amongst the multiple gaming establishments based on any suitable fee splitting arrangement, such as based on hours played at each streaming device and/or coin-in at each streaming device.

In various embodiments, the live streaming platform enables one or more viewers interfacing with a client device to access the live stream without further interactions. In these embodiments, the live streaming platform enables the viewer to passively observe the events occurring at the streaming device. In various embodiments, the live streaming platform enables one or more viewers interfacing with a client device to access the live stream and further interact with the user at the streaming device. For example, live streaming platform interface **116** enables one or more chats to occur between the streaming device and zero, one or more client devices utilizing a chat component **142** of the live streaming platform **106** of FIGS. 1A, 1B, and 1C. In these embodiments, upon an occurrence of a viewer interaction event, the live streaming platform enables the viewer to not only observe the events occurring at the streaming device but additionally interact with the user at the streaming device, such as by providing gifts to the user at the streaming device and/or participating in a conversation with the user at the streaming device. In various embodiments, the live streaming platform enables one or more viewers interfacing with a client device to access the live stream and further interact with the live streaming platform to access certain wagering features. In these embodiments, upon an occurrence of a viewer interaction event, the live streaming platform enables the viewer to not only observe the events occurring at the streaming device from the client device but

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additionally interact with the live streaming platform from the client device to place one or more wagers on one or more events occurring at the streaming device which are part of the live stream.

In various embodiments wherein the viewer interfacing with a client device actively interacts with the live stream, following the viewer establishing and adequately funding a live streaming wagering account (e.g., account **128** maintained in association with the live streaming platform of FIGS. 1A, 1B, and 1C) and accessing a live stream associated with a gaming session at a streaming device, the live streaming platform enables the viewer to place a back bet (e.g., back betting opportunities **136** offered in association with the live streaming platform of FIGS. 1A, 1B, and 1C). Such back bets are based on the bet placed by the user at the streaming device and may be associated with a play of a game (e.g., the game **138** offered by the EGM operating as the streaming device of FIG. 1A) occurring at the streaming device and/or any wagerable event occurring at the streaming device that is independent of any play of any game. In this embodiment, if the user at the streaming device does not win any award based on the placed wager, then the viewer also loses the back bet. On the other hand, if the user at the streaming device wins an award (having a value greater than zero) based on the placed wager, then any viewer who was back betting along with the user at the streaming device will win the same amount. In one such embodiment, the system provides the entire win amount of the viewer to the viewer (to place another back bet or transfer to the live streaming wagering account). In another such embodiment, the system provides or otherwise automatically gifts a portion of the win amount of the viewer to the user at the streaming device.

In various embodiments wherein the viewer interfacing with a client device actively interacts with the live stream, following the viewer establishing and adequately funding a live streaming wagering account and accessing a live stream associated with a gaming session at a streaming device, the live streaming platform enables the viewer at the client device to place a bet on a play of a game or other event occurring at the streaming device independent of any bet placed by the user at the streaming device. In this embodiment, the system enables a wager to be placed by the viewer at the client device on any suitable event that may or may not occur in association with one or more plays of one or more games at the streaming device and/or independent of any such plays at the streaming device. That is, the live streaming platform enables the viewer at the client device to wager on different events occurring in association with the streaming device, such as, but not limited to, the type of wins occurring at the streaming device, the amount of wins/losses occurring at the streaming device, any changing in a credit meter of the streaming device, any bonus being hit or other game event to be trigger at the streaming device including the number of times the event happened. For example, the live streaming platform enables the viewer at the client device to place a wager that a three cherry wining symbol combination will occur in the next ten games played at the streaming device, during a session of gaming at the streaming device, over a period of time (e.g., one minute) of gaming at the streaming device, and/or during a time window (e.g. 1:01 pm until 1:03 pm) of gaming at the streaming device. In different embodiments, the system provides the entire win amount of any winning wager to the viewer to the viewer (to place another bet or transfer to the live streaming wagering account) or the system provides a portion of the win amount of any winning wager to the viewer to the



viewer, such as by automatically gifting a portion of the win amount of the viewer to the user at the streaming device.

In various embodiments wherein the viewer interfacing with a client device actively interacts with the live stream, following the viewer establishing and adequately funding a live streaming wagering account and accessing a live stream associated with a gaming session at a streaming device, the live streaming platform enables the viewer to place a bet against one or more other viewers (and/or one or more users at one or more streaming devices). For example, the system enables a viewer to place a bet on which user will win an ongoing tournament. In this embodiment, if the wagered on user does not win the ongoing tournament, then the viewer loses their wager. On the other hand, if the wagered on user wins the ongoing tournament, then the system provides the viewer an award based on the lost wagers placed by one or more other viewer (and/or one or more users at one or more streaming devices) minus a percentage held by the system.

In various embodiments, the system of the present disclosure is configured to enable the play of any suitable game occurring at a streaming device to be streamed to one or more viewers at one or more client devices. In various embodiments, the game comprises a play of a primary game, such as a primary wagering game, wherein the game triggering event includes the placement of a wager on the play of the primary game. In various embodiments, the game comprises a play of a secondary game, such as a free spin game, wherein the game triggering event occurs based on a displayed event associated with a play of a wagered on primary game. In various embodiments wherein the game comprises a secondary game, such as a free spin game, the game triggering event occurs based on an event independent of any displayed event associated with the play of the wagered on primary game. In various embodiments, the displayed play of the game includes, but is not limited to: a play of any suitable spinning reels game, a play of any suitable wheel game; a play of any suitable card game such as blackjack, poker or baccarat; a play of any suitable keno game; a play of any suitable bingo game; a play of any suitable offer and acceptance game; a play of any suitable award ladder game; a play of any suitable puzzle-type game; a play of any suitable persistence game; a play of any suitable selection game; a play of any suitable cascading symbols game; a play of any suitable ways to win game; a play of any suitable scatter pay game; a play of any suitable coin-pusher game; a play of any suitable elimination game; a play of any suitable stacked wilds game; a play of any suitable trail game; a play of any suitable bingo game; a play of any suitable video scratch-off game; a play of any suitable pick-until-complete game; a play of any suitable shooting simulation game; a play of any suitable racing game; a play of any suitable promotional game; a play of any suitable high-low game; a play of any suitable lottery game; a play of any suitable number selection game; a play of any suitable dice game; a play of any suitable skill game; a play of any suitable partial skill game; a play of any suitable auction game; a play of any suitable reverse-auction game; a play of any suitable group game; and/or a play of any other game of the present disclosure. In various embodiments, the awards available to be won by one or more viewers of one or more client device in association with one or more wagers placed by such viewers of such client devices (as well as the awards available to the user of the streaming device) include, but are not limited to, one or more of: a quantity of monetary credits, a quantity of non-monetary credits, a quantity of promotional credits, a quantity of player tracking points, a progressive award, a modifier, such as a multiplier, a quan-

tity of free plays of one or more games, a quantity of plays of one or more secondary or bonus games, a multiplier of a quantity of free plays of a game, one or more lottery based awards, such as lottery or drawing tickets, a wager match for one or more plays of one or more games, an increase in the average expected payback percentage for one or more plays of one or more games, one or more comps, such as a free dinner, a free night's stay at a hotel, a high value product such as a free car, or a low value product, one or more bonus credits usable for online play, a lump sum of player tracking points or credits, a multiplier for player tracking points or credits, an increase in a membership or player tracking level, one or more coupons or promotions usable within and/or outside of the gaming establishment (e.g., a 20% off coupon for use at a convenience store), virtual goods associated with the system, virtual goods not associated with the system, an access code usable to unlock content on an internet.

It should be appreciated that in various embodiments that enable one or more viewers of one or more client device to interact with one or more live streams (e.g., via live chatting with a user at the streaming device generating at least part of the live stream and/or via wagering on one or more events associated with the streaming device generating at least part of the live stream), the live streaming platform accounts for this interaction in determining any additional information to display as part of the live stream. For example, the additional information incorporated as part of a live stream includes data associated with one or more bets placed in association with a user at a streaming device, such as the amount won by viewers for back betting on a user at a streaming device or the win and loss records for back betting sports wagers placed by viewers in association with a user at a streaming device. In such embodiments wherein one or more viewers interact with the live stream, since the streaming device is the entity that encodes the video stream, any activities or event occurring on the live streaming platform must be sent to the streaming device to update any graphical elements rendered in the video stream. For example, if a viewer sends a gift to a user at the streaming device, then the live streaming platform generates an award message. In this example, either the live streaming platform sends the generated message to the streaming device, or the streaming device actively polls the live streaming platform for any outstanding notification messages. Upon receipt of a notification message, the streaming device acts upon the notification, such as displaying a notification that only the user at the streaming device can see, rendering of one or more notifications onto the game itself, and/or rendering of one or more notifications as part of the video stream (which are viewable by viewers and may or may not be seen by the user at the streaming device).

As indicated above, in various embodiments, to achieve the streaming features described herein, the streaming EGM includes or is configured to be connected to various mechanical components that are usable by a streamer to create or partially create and transmit a stream mix (such as but not limited to a live stream that includes a mixture of components such a game play audio and video displays, streamer audio and video displays, game play information displays, and game play related codes). These components can, for example, function to provide: (1) the ability to capture the relevant game play displays displayed by the display device(s) of the streaming EGM being played by the streamer and the audio of such game plays; (2) the ability to capture the relevant game play related information and codes; (3) the ability to capture the video of at least parts of the streamer (such as the face of the streamer); (4) the ability



to capture the audio of the streamer (such as the voice of the streamer); (5) the ability to control, adjust, modify, and/or otherwise configure the stream mix layout (including the stream mix); (6) the ability to view the stream mix; (7) the ability to encode the video and audio; (8) the ability to record the stream mix including the game play related video and audio and the streamer related video and audio, as well as any of the additional above described functions; (9) the ability to publish streamer information about the stream and/or the streamer via the stream (such but not limited to the status or health of the streamer, the number of active viewers of the streamer); (10) the ability to display a live chat with the streamer via the stream; and/or (11) the ability to send chat messages or create automatic chat messages, and other suitable chat message functionality.

Turning now to FIGS. 3A, 3B, 3C, 3D, 3E, 3F, 3G, 3H, 3I, and 3J, various different example streaming EGM configurations for capturing video and audio of a streamer in accordance with various embodiments of the present disclosure are illustrated.

FIG. 3A illustrates an example streaming EGM 102A that includes an EGM cabinet 103a and various components such as but not limited to the example EGM components described herein. In this example embodiment, the live streaming SMIB 150a is positioned in the EGM cabinet 103a and includes a display device 151a associated with the SMIB 150a. The streaming EGM 102a further includes a video camera 118a and a microphone 120a mounted to a wall such as a side wall (not labeled) of the EGM cabinet 103a and communicatively connected to the SMIB 150a. The video camera 118a is configured to capture video of the player (specifically the streamer) of the EGM 102A and to communicate signals representing the captured video to the SMIB 150a. The SMIB 150a is configured to process and transmit such signals as described above. The microphone 120a is configured to capture audio of the player and (specifically the streamer) of the EGM 102A and to communicate signals representing the captured audio to the SMIB 150a. The SMIB 150a is configured to process and transmit such signals as described above. The video camera 118a and the microphone 120a can be connected or formed as a single device or can be separate devices. The EGM 102A includes one or more display devices such as the main display 2116a that displays the games provided by the EGM 102A and related game and wager information. The main display 2116a can be configured to additionally display the video of the streamer captured by video camera 118a so that the streamer can see the video being streamed out of the EGM 102A. The EGM 102A can additionally include one or more audio producing devices such as speakers (not shown) that produce the sounds of the games provided by the EGM 102A and related game and wager information. The audio producing devices can also be configured to additionally produce the audio of the streamer captured by microphone 120a so that the streamer can hear the audio being streamed out of the EGM 102B. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM 102A can provide one or more input devices that enable a streamer to control and/or change such outputs. In various embodiments, the video camera 118a and/or the microphone 120a are moveable relative to the EGM cabinet 103a (such as by flipping in and out or otherwise such that it can moved from a use position to a

non-use position). For this example embodiment, the video camera 118a and the microphone 120a can be added to existing EGM's.

FIG. 3B illustrates another example streaming EGM 102B that includes an EGM cabinet 103b and various components such as but not limited to the example EGM components described herein. In this example embodiment, the live streaming SMIB 150b is positioned in the EGM cabinet 103b and includes a display device 151b associated with the SMIB 150b. The streaming EGM 102b further includes a video camera 118b and a microphone 120b built into the EGM cabinet 103b such as in or adjacent to a side wall (not labeled) of the EGM cabinet 103b and communicatively connected to the SMIB 150b. The video camera 118b is configured to capture video of the player (specifically the streamer) of the EGM 102B and to communicate signals representing the captured video to the SMIB 150b. The SMIB 150b is configured to process and transmit such signals as described above. The microphone 120b is configured to capture audio of the player and (specifically the streamer) of the EGM 102B and to communicate signals representing the captured audio to the SMIB 150b. The SMIB 150b is configured to process and transmit such signals as described above. The video camera 118b and the microphone 120b can be connected or formed as a single device or can be separate devices. The EGM 102B includes one or more display devices such as the main display 2116b that displays the games provided by the EGM 102B and related game and wager information. The main display 2116b can be configured to additionally display the video of the streamer captured by video camera 118b so that the streamer can see the video being streamed out of the EGM 102B. The EGM 102B can additionally include one or more audio producing devices such as speakers (not shown) that produce the sounds of the games provided by the EGM 102B and related game and wager information. The audio producing device can be configured to additionally produce the audio of the streamer captured by microphone 120b so that the streamer can hear the audio being streamed out of the EGM 102B. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM 102B can provide one or more input devices that enable a streamer to control and/or change such outputs.

FIG. 3C illustrates another example streaming EGM 102C that includes an EGM cabinet 103c and various components such as but not limited to the example EGM components described herein. In this example embodiment, the live streaming SMIB 150c is positioned in the EGM cabinet 103c and includes a display device 151c associated with the SMIB 150c. The streaming EGM 102c further includes a video camera 118c and a microphone 120c built into the EGM cabinet 103c such as below the top wall (not labeled) of the EGM cabinet 103c and communicatively connected to the SMIB 150c. The video camera 118c is configured to capture video of the player (specifically the streamer) of the EGM 102C and to communicate signals representing the captured video to the SMIB 150c. The SMIB 150c is configured to process and transmit such signals as described above. The microphone 120c is configured to capture audio of the player and (specifically the streamer) of the EGM 102C and to communicate signals representing the captured audio to the SMIB 150c. The SMIB 150c is configured to process and transmit such signals as described above. The video camera 118c and the



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microphone **120c** can be connected or formed as a single device or can be separate devices. The EGM **102C** includes one or more display devices such as the main display **2116c** that displays the games provided by the EGM **102C** and related game and wager information. The main display **2116c** can be configured to additionally display the video of the streamer captured by video camera **118c** so that the streamer can see the video being streamed out of the EGM **102C**. The EGM **102C** can additionally include one or more audio producing devices such as speakers (not shown) that produce the sounds of the games provided by the EGM **102C** and related game and wager information. The audio producing device can be configured to additionally produce the audio of the streamer captured by microphone **120c** so that the streamer can hear the audio being streamed out of the EGM **102C**. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM **102C** can provide one or more input devices that enable a streamer to control and/or change such outputs.

FIG. 3D illustrates another example streaming EGM **102D** that includes an EGM cabinet **103d** and various components such as but not limited to the example EGM components described herein. In this example embodiment, a live streaming SMIB (not shown) can be positioned in the EGM cabinet **103d** and can include a display device (not shown) associated with the SMIB. The streaming EGM **102d** further includes a video camera **118d** and a microphone (not shown) built into the EGM cabinet **103d**. In this example, the camera **118d** is positioned in the EGM cabinet **103d** behind part of a transmissive display **119d** of the EGM **102D**. The transmissive display **119d** enables the camera **118d** to obtain images through the display device **119d**. In various such embodiments, the transmissive display device **119d** has relative spaces between the pixels. When the pixels are on, the player cannot see through the display device **119d**. When the pixels are off, the player can see through the display device **119d**. Thus, the transmissive display device **119d** can be considered transparent or semi-transparent and thus this can be used for the streamer video camera. The video camera **118d** is communicatively connected to the SMIB. The video camera **118d** is configured to capture video of the player (specifically the streamer S) of the EGM **102D** through the transmissive display **119d** and to communicate signals representing the captured video to the SMIB. The SMIB is configured to process and transmit such signals as described above. The microphone is configured to capture audio of the player and (specifically the streamer S) of the EGM **102D** and to communicate signals representing the captured audio to the SMIB. The SMIB is configured to process and transmit such signals as described above. The video camera **118d** and the microphone are preferably separate devices in this example embodiment (even though they are shown together in FIG. 3D). The EGM **102D** includes one or more display devices such as the main display (not shown) that displays the games provided by the EGM **102D** and related game and wager information. The main display can be configured to additionally display the video of the streamer captured by video camera **118d** so that the streamer can see the video being streamed out of the EGM **102D**. The EGM **102D** can additionally include one or more audio producing devices such as speakers (not shown) that produce the sounds of the games provided by the EGM **102D** and related game and wager information. The audio producing device can be configured to additionally produce

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the audio of the streamer captured by microphone so that the streamer can hear the audio being streamed out of the EGM **102D**. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM **102D** can provide one or more input devices that enable a streamer to control and/or change such outputs.

FIG. 3E illustrates another example streaming EGM **102E** that includes an EGM cabinet **103e** and various components such as but not limited to the example EGM components described herein. In this example embodiment, the live streaming SMIB **150e** is positioned in the EGM cabinet **103e** and includes a display device **151e** associated with the SMIB **150e**. The streaming EGM **102e** further includes a video camera **118e** and a microphone **120e** built into the EGM cabinet **103e** such as below the top wall (not labeled) of the EGM cabinet **103e** and communicatively connected to the SMIB **150e**; although the camera **118e** and the microphone **120e** can be alternatively positioned in this embodiment. The video camera **118e** is configured to capture video of the player (specifically the streamer) of the EGM **102E** and to communicate signals representing the captured video to the SMIB **150e**. The SMIB **150e** is configured to process and transmit such signals as described above. The microphone **120e** is configured to capture audio of the player and (specifically the streamer) of the EGM **102E** and to communicate signals representing the captured audio to the SMIB **150e**. The SMIB **150e** is configured to process and transmit such signals as described above. The video camera **118e** and the microphone **120e** can be connected or formed as a single device or can be separate devices. The EGM **102E** includes one or more display devices such as the main display **2116e** that displays the games provided by the EGM **102E** and related game and wager information. In this example embodiment, in addition to the main display **2116e**, the EGM **102E** includes an auxiliary display device **5000e** mounted to a wall such as a side wall (not labeled) of the EGM cabinet **103e** and communicatively connected to the SMIB **150e**. The auxiliary display device **5000e** is configured to display the video of the streamer captured by video camera **118e** so that the streamer can see the video being streamed out of the EGM **102E**. In this embodiment, the EGM **102E** additionally includes one or more audio producing devices such as speaker **5010e** configured to produce the audio of the streamer captured by microphone **120e** so that the streamer can hear the audio being streamed out of the EGM **102E**. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM **102E** can provide one or more input devices that enable a streamer to control and/or change such outputs. In this embodiment, the auxiliary display device **5000e** is also configured to display the game play that will be part of the streamed content from the EGM **102E**. Thus, the auxiliary display device **5000e** provides a way for the streamer to view the exact content (including the streamer audio and video as well as the game content) that a viewer would see on a remote viewing EGM. The auxiliary display device **5000e** can also display other information such as but not limited to communications (such as chats) with the second users (e.g., viewers of the live streaming). In various embodiments, the auxiliary display device **5000e** is move-



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able (such as by flipping in and out or otherwise such that it can be moved from a use position to a non-use position).

FIG. 3F illustrates another example streaming EGM 102F that includes an EGM cabinet 103f and various components such as but not limited to the example EGM components described herein. In this example embodiment, the live streaming SMIB 150f is positioned in the EGM cabinet 103e and includes a display device 151e associated with the SMIB 150e. The streaming EGM 102F further includes a video camera 118f and a microphone 120f built into the EGM cabinet 103f such as below the top wall (not labeled) of the EGM cabinet 103f and communicatively connected to the SMIB 150f; although the camera 118f and the microphone 120f can be alternatively positioned in this embodiment. The video camera 118f is configured to capture video of the player (specifically the streamer) of the EGM 102F and to communicate signals representing the captured video to the SMIB 150f. The SMIB 150f is configured to process and transmit such signals as described above. The microphone 120f is configured to capture audio of the player and (specifically the streamer) of the EGM 102F and to communicate signals representing the captured audio to the SMIB 150f. The SMIB 150f is configured to process and transmit such signals as described above. The video camera 118f and the microphone 120f can be connected or formed as a single device or can be separate devices. The EGM 102F includes one or more display devices such as the main display 2116f that displays the games provided by the EGM 102F and related game and wager information. In this embodiment, the main display 2116f is configured to display the video of the streamer captured by video camera 118f so that the streamer can see the video being streamed out of the EGM 102F. The EGM 102F can additionally include one or more audio producing devices such as speakers (not shown) that produce the sounds of the games provided by the EGM 102F and related game and wager information. The audio producing device can be configured to additionally produce the audio of the streamer captured by microphone so that the streamer can hear the audio being streamed out of the EGM 102F. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM 102F can provide one or more input devices that enable a streamer to control and/or change such outputs. In this embodiment, the main display device 2116f is configured to display the game play that will be part of the streamed content from the EGM 102F. Thus, the main display provides a way for the streamer to view the exact content (including the streamer audio and video as well as the game content) that a viewer would see on a remote viewing EGM. The main display 2116f in this embodiment can also be configured to display a communication (such as a chat) feature that enables the streamer to communicate with the viewers.

FIG. 3G illustrates another example streaming EGM 102G that includes an EGM cabinet 103g and various components such as but not limited to the example EGM components described herein. In this example embodiment, the live streaming SMIB 150g is positioned in the EGM cabinet 103g and includes a display device 151g associated with the SMIB 150g. The streaming EGM 102g further includes a video camera 118g and a microphone 120g built into the EGM cabinet 103e such as between the main display device 2116g and an auxiliary display device 5000g mounted in the EGM cabinet 103g above and spaced apart

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from the main display device 2116g; although the camera 118g and the microphone 120g can be alternatively positioned in this embodiment. The video camera 118g is configured to capture video of the player (specifically the streamer) of the EGM 102G and to communicate signals representing the captured video to the SMIB 150g. The SMIB 150g is configured to process and transmit such signals as described above. The microphone 120g is configured to capture audio of the player and (specifically the streamer) of the EGM 102G and to communicate signals representing the captured audio to the SMIB 150g. The SMIB 150g is configured to process and transmit such signals as described above. The video camera 118g and the microphone 120g can be connected or formed as a single device or can be separate devices. The EGM 102G includes one or more display devices such as the main display 2116g that displays the games provided by the EGM 102G and related game and wager information. In this embodiment, in addition to the main display 2116g, the EGM 102G includes the auxiliary display device 5000g communicatively connected to the SMIB 150g. The auxiliary display device 5000g is configured to display the video of the streamer captured by video camera 118g so that the streamer can see the video being streamed out of the EGM 102G. In this embodiment, the EGM 102G can additionally include one or more audio producing devices such as speaker (not shown) configured to produce the audio of the streamer captured by microphone 120g so that the streamer can hear the audio being streamed out of the EGM 102G. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM 102G can provide one or more input devices that enable a streamer to control and/or change such outputs. In this embodiment, the auxiliary display device 5000g is also configured to display the game play that will be part of the streamed content from the EGM 102G. Thus, the auxiliary display device 5000g provides a way for the streamer to view the exact content (including the streamer audio and video as well as the game content) that a viewer would see on a remote viewing EGM. The auxiliary display device 5000g in this embodiment can also be configured to display a communication (such as a chat) feature that enables the streamer to communicate with the viewers.

FIG. 3H illustrates another example streaming EGM 102H that includes an EGM cabinet 103h and various components such as but not limited to the example EGM components described herein. In this example embodiment, the live streaming SMIB 150h is positioned in the EGM cabinet 103h and includes a display device 151h associated with the SMIB 150h. The streaming EGM 102H further includes a video camera 118h and a microphone 120h built into the EGM cabinet 103h such as below the top wall (not labeled) of the EGM cabinet 103h and communicatively connected to the SMIB 150h. The video camera 118h is configured to capture video of the player (specifically the streamer) of the EGM 102H and to communicate signals representing the captured video to the SMIB 150h. The SMIB 150h is configured to process and transmit such signals as described above. The microphone 120h is configured to capture audio of the player and (specifically the streamer) of the EGM 102H and to communicate signals representing the captured audio to the SMIB 150h. The SMIB 150h is configured to process and transmit such signals as described above. The video camera 118h and the



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microphone **120h** can be connected or formed as a single device or can be separate devices. The EGM **102H** includes one or more display devices such as the main display **2116h** that displays the games provided by the EGM **102H** and related game and wager information. The main display **2116h** can be configured to additionally display the video of the streamer captured by video camera **118h** so that the streamer can see the video being streamed out of the EGM **102H**. The EGM **102H** can additionally include one or more audio producing devices such as speakers (not shown) that produce the sounds of the games provided by the EGM **102H** and related game and wager information. The audio producing device can be configured to additionally produce the audio of the streamer captured by microphone **120h** so that the streamer can hear the audio being streamed out of the EGM **102H**. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM **102H** can provide one or more input devices that enable a streamer to control and/or change such outputs. The streaming EGM **102H** further includes one or more output ports that enable a streamer to connect the streamer's computing device **6000h** to the EGM **102H**. In this example embodiment, the EGM **102H** includes a first output port **105h1** supported by the EGM cabinet **103h**. The first output port **105h1** is connected to the camera **118h** and the microphone **120h** and is configured to be connected by a suitable communication line **6010h** to the streamer's computing device **6000h**. This first output port **105h1** thus facilitates communication of the video and audio signals (that represent the streamer's video and audio) to the streamer's computing device **6000h**. In this example embodiment, the EGM **102H** includes a second output port **105h2** supported by the EGM cabinet **103h**. The second output port **105h2** is connected to the SMIB **150h** or the game controller of the EGM **102H** and is configured to be connected by a suitable communication line **6010h** to the streamer's computing device **6000h**. This second output port **105h2** facilitates communication of the video and audio signals of the game play and related information to the streamer's computing device **6000h**. The combination of these signals enable the streamer's computing device **6000h** to combine such audio and video feed's and to stream out such combined audio and video feeds. The combination of these signals also enable the influencer to store the video of their gambling stream so that they can later process that video offline (such as using a video editing tool), and then create videos (or on other equivalent services) that can be subsequently posted to help build up their following. In various embodiments, the influencer computer can combine the video in real-time and distribute the video to more traditional streaming platforms (such as but not limited to Twitch or YouTube), although certain such platforms may not allow back-betting.

FIG. 3I illustrates another example streaming EGM **102i** that includes an EGM cabinet **103i** and various components such as but not limited to the example EGM components described herein. In this example embodiment, the live streaming SMIB **150i** is positioned in the EGM cabinet **103i** and includes a display device **151i** associated with the SMIB **150i**. The streaming EGM **102i** further includes a video camera **118i** and a microphone **120i** built into the EGM cabinet **103i** below the top wall (not labeled) of the EGM cabinet **103i** and communicatively connected to the SMIB **150i**. The video camera **118i** is configured to capture video of the player (specifically the streamer) of the EGM **102i** and

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to communicate signals representing the captured video to the SMIB **150i**. The SMIB **150i** is configured to process and transmit such signals as described above. The microphone **120i** is configured to capture audio of the player and (specifically the streamer) of the EGM **102i** and to communicate signals representing the captured audio to the SMIB **150i**. The SMIB **150i** is configured to process and transmit such signals as described above. The video camera **118i** and the microphone **120i** can be connected or formed as a single device or can be separate devices. The EGM **102i** includes one or more display devices such as the main display **2116i** that displays the games provided by the EGM **102i** and related game and wager information. The main display **2116i** can be configured to additionally display the video of the streamer captured by a video camera so that the streamer can see the video being streamed out of the EGM **102i**. The EGM **102i** can additionally include one or more audio producing devices such as speakers (not shown) that produce the sounds of the games provided by the EGM **102i** and related game and wager information. The audio producing device can be configured to additionally produce the audio of the streamer captured by microphone **120i** so that the streamer can hear the audio being streamed out of the EGM **102i**. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM **102i** can provide one or more input devices that enable a streamer to control and/or change such outputs. The streaming EGM **102i** further includes one or more output ports that enable a streamer to connect the streamer's computing device **6000i** to the EGM **102i**. In this example embodiment, the EGM **102i** includes an output port **105i** supported by the EGM cabinet **103i**. The output port **105i** is connected to the SMIB **150i** OR the game controller of the EGM **102i** and is configured to be connected by a suitable communication line **6020i** to the streamer's computing device **6000i**. This output port **105i** thus facilitates communication of the video and audio signals of the game play and related information to the streamer's computing device **6000i**. In this example embodiment, the streamer can also employ a video camera **6050i** and a microphone **6060i** separate from the EGM cabinet **103i** (and mounted on a stand such as tri-pod **6100i**). The video camera **6050i** is configured to capture video of the player (specifically the streamer) and to communicate signals representing the captured video to the streamer's computing device **6000i**. The microphone **6060i** is configured to capture audio of the player (specifically the streamer) and to communicate signals representing the captured audio to the streamer's computing device **6000i**. This enables the streamer's computing device **6000i** to combine such audio and video feed's and to stream out such combined audio and video feeds. As mentioned in the example above, the influencer's computer can store the video for later processing, edits, and posting of a more production quality version of the stream to streaming channels (such as YouTube). Alternatively, the influencer's computer can additionally publish the video to a livestream on a suitable platform (such as YouTube).

FIG. 3J illustrates another example streaming EGM **102j** that includes an EGM cabinet **103j** and various components such as but not limited to the example EGM components described herein. In this example embodiment, the live streaming SMIB **150j** is positioned in the EGM cabinet **103j** and includes a display device (not shown) associated with the SMIB **150j**. The streaming EGM **102j** can but does not



need to include a video camera and a microphone built into the EGM cabinet **103j** and communicatively connected to the SMIB **150j**. The video camera can be configured to capture video of the player (specifically the streamer) of the EGM **102j** and to communicate signals representing the captured video to the SMIB **150j**. The SMIB **150j** can be configured to process and transmit such signals as described above. The microphone can be configured to capture audio of the player and (specifically the streamer) of the EGM **102j** and to communicate signals representing the captured audio to the SMIB **150j**. The SMIB **150j** can be configured to process and transmit such signals as described above. The EGM **102j** includes one or more display devices that displays the games provided by the EGM **102j** and related game and wager information. The main display **2116j** can be configured to additionally display the video of the streamer captured by video camera so that the streamer can see the video being streamed out of the EGM **102j**. The EGM **102j** can additionally include one or more audio producing devices such as speakers (not shown) that produce the sounds of the games provided by the EGM **102j** and related game and wager information. The audio producing device can be configured to additionally produce the audio of the streamer captured by microphone **120j** so that the streamer can hear the audio being streamed out of the EGM **102j**. In certain such embodiments, the audio can be provided via an output device that the streamer can use with headphones (such as ear pods) so that the streamer can hear the audio via a different channel than the normal game play sounds. As mentioned above, in various embodiments, the EGM **102j** can provide one or more input devices that enable a streamer to control and/or change such outputs. The streaming EGM **102j** further includes one or more output ports that enable a streamer to connect the streamer's computing device **6000j** to the EGM **102j**. In this example embodiment, the EGM **102j** includes an output port **105j** supported by the EGM cabinet **103j**. The output port **105j** is connected to the SMIB **150j** OR the game controller of the EGM **102j** and is configured to be connected by a suitable communication line **6020j** to the streamer's computing device **6000i**. This output port **105j** thus facilitates communication of the video and audio signals of the game play and related information to the streamer's computing device **6000j**. In this example embodiment, the streamer can also employ a video camera **6050j** and a microphone (not shown) separate from the EGM cabinet **103j** (and mounted on a stand such as tri-pod **6100j**). The video camera **6050j** is configured to capture video of the player (specifically the streamer) and to communicate signals representing the captured video to the streamer's computing device **6000j**. The microphone is configured to capture audio of the player (specifically the streamer) and to communicate signals representing the captured audio to the streamer's computing device **6000j**. This enables the streamer's computing device **6000j** to combine such audio and video feed's and to stream out such combined audio and video feeds (the stream mix). FIG. 3J further shows a viewer device **7000j** in the form of a user mobile cellular phone that enables a viewer to receive and view the stream mix via a suitable network **6500j**. In various such embodiments, the streamer can start a live stream and viewers can scan a suitable code such as a QR code **7010j** to access the live stream. The present disclosure contemplates that the QR code can be provided to the viewers in any suitable manner and that other code formats could be employed. In various embodiments, the viewers have to register or have an account to view the live stream. In various other embodiments, the viewers do not have to register or have an account

to view the live stream. In various embodiments, the QR Code can be displayed in a display device by the casino so that other players can scan the code to join the stream. In other embodiments, the viewers can see a list of active streams on their web browser or mobile app, and then click on a link to launch the stream (assuming the viewer has an appropriately registered account).

It should be appreciated that in various of the above embodiments, the EGM can include one or more input devices that the streamer can use to plug in the streamer's camera and microphone into such that the EGM and the SMIB thereof can receive signals from such devices. This can enable the streamer to use higher end camera and microphone equipment than in the EGM.

It should be appreciated from the above that various embodiments of the system and method of the present disclosure enable the streamer to view the streaming mix with the display device of the EGM or with an additional displayed device attached to or connected to the EGM.

It should further be appreciated from the above that various embodiments of the system and method of the present disclosure facilitate scaling of the components of the streaming mix to accommodate the display of the streaming mix and the game play on the EGM display devices. In various embodiment, the streaming mix is always shown, while in other embodiments, the streaming mix is optionally shown or shown for a short period of time or on demand based upon the request of the streamer (such as by the press of a physical button or other user interface element, such as an on-screen button).

The present disclosure contemplates that any combination of the above components described in connection with any of the example embodiments of FIGS. 3A to 3J can be suitably combined with one another to create other example systems in accordance with the present disclosure.

The present disclosure contemplates that one or more of the streamer's electronic mobile devices (such as cell phone or tablets) can be alternatively or additionally employed to capture video and audio signals and to provide such signals for the live streaming such as explained in the example embodiments below.

The present disclosure also contemplates that in various embodiments, the respective cameras can be manually and/or remotely adjustable (position, angle, camera settings (focus, zoom, etc.)) and that in other embodiments the cameras are in a static position with static attributes. The present disclosure also contemplates that in each of these various embodiments, multiple cameras can be employed instead of a single camera.

The present disclosure contemplates that each of the example embodiments of FIGS. 3A to 3J enables a streamer to create and customize a live stream while the streamer is physically at the EGM. In various embodiments, these settings via the input devices are enabled via the SMIB. These embodiments can be configured to enable the streamer to control the layout of the streamed video. For example, the above mentioned input devices can be configured to enable the streamer to position the live video of the streamer's face in the upper left-hand corner of the stream or to position live video of the streamer's face in a side-by-side position with the displayed games (such as the displayed primary game or secondary game). The above mentioned input devices can be configured to enable the streamer to select to provide no video of the streamer's face (and thus only provide streamer voice audio as part the stream of the game the streamer is playing). The above mentioned input devices can be configured to enable the streamer to select to



provide only an image of the streamer's face so that the streamer can speak to the viewers. The above mentioned input devices can be configured to enable the streamer to preview the stream going to the viewer for verification purposes. This enables the streamer to see what the viewer(s) is/are seeing or will see so that the streamer can position themselves accordingly (e.g., move left or right, move closer or farther from the camera, etc.) to get the desired presentation for the viewers. The above mentioned input devices can be configured to enable the streamer to otherwise adjust the relative sizes of the games the streamer plays and the streamer's face in the stream mix.

The present disclosure contemplates each of the example EGMs of FIGS. 3A to 3J can be configured to limit certain streaming configurations by the streamer. In various such embodiments, the input devices enable the streamer to position the streamer's face or image in any suitable location in the stream except in a location that violates regulatory requirements such the part of the stream that includes the player balance (such as the credit meter), the win amount, the current wager, the door status icons, notifications of monetary amounts inserted or dispensed or door status displays (i.e., a display that indicates which doors are open on the EGM cabinet). This limitation on the customization by streamer enables the stream to include all necessary information for the viewers to see (such as when the viewer are back betting and thus must be permitted to see these critical elements related to the game plays for such back betting). The limitation also enables a suitable game history to be created and stored should any back bettor viewers file a dispute associated with the outcome of a game of the streamer they have bet on. In various embodiments, the input devices can enable the streamer to change the streaming configuration for different time periods such as when the streamer is not streaming game play that enables back betting. In other words, the layout or quality of the stream can be change between when the streamer is simply talking and there is no wagering opportunities and change to a different layout and quality when back betting by the viewer can occur or when the result of the game play that is bet on is displayed.

In various other embodiments, the system can be configured such that viewers that are back bettors receive one version of the stream at their viewing EGM while viewers that are not back bettors receive a different version of the stream at their viewing EGM. The differences can be any suitable difference including what is displayed (e.g., stream layout such as described above) as well as video quality (such as frame rate, compression, size, etc.). In this manner, the viewers that are back bettors could receive a better experience or better quality streams. In certain such cases, the additional revenue from the back betting can justify the added bandwidth and computational expenses needed for such viewers.

In various such embodiments, the system can provide higher value customers (either streamers or viewers) with better quality streams. For example, in various embodiments, the live streaming SMIB can be configured to encode the quality of the streamer's face according to information from the player loyalty account such as player loyalty level or amount of money or time spent wagering at the casino.

In various such embodiments, to save on bandwidth cost, the system and method of the present disclosure can provide the lowest quality stream in the form of a still picture (such as a picture taken from the camera of the EGM or from the player account), icon, or avatar of the streamer.

In various embodiments, the live streaming SMIB encodes the video and provides overlays that are casino specific such as the name of the casino, the location in the casino in which the EGM is operating, time information, date information, and/or significant events or features/attractions in the casino, or suitable advertisements.

In various embodiments, the live streaming SMIB encodes the video and provides overlays that are streamer specific and associated with the streamer, such as the name of the streamer, the nickname of the streamer, the age of the streamer, the account status of the streamer, the quantity of player loyalty points of the streamer, the amount of time holding the player account of the streamer, information about the streamer's social media profile, or their account on other non-gambling streaming platforms (such as YouTube, Twitch, etc.), and/or other streamer specific information.

In various embodiments, the resident casino SMIB can display the previously mentioned information for view by the streamer, but the live streaming SMIB of an EGM can omit encoding this information in the stream for data privacy purposes. In various embodiments, the live streaming SMIB is a component of the resident casino management system, and in other embodiments, the live streaming SMIB can be distinct and separate from the resident casino SMIB of the resident casino management system.

In various embodiments, the live streaming SMIB is configured to charge the streamer money or player points to use the live streaming and/or recording features. For example, the live streaming SMIB can charge the streamer player loyalty points per minute to use the live streaming feature. The live streaming SMIB can also charge money to streamer by deducting money from the credit meter of the EGM or a suitable wagering account of the streamer.

In various embodiments, as indicated above, the live streaming SMIB has one or more video inputs with hardware interfaces such as HDMI, DVI, VGA, and/or Ethernet.

In various embodiments, the live streaming SMIB can have an optional or additional audio input such as a 3.5 mm analog input or a fiber optic input.

In various embodiments, the live streaming SMIB can have a communication interface with the EGM such as serial, Ethernet, fiber, or other wireless technology.

In various embodiments, the live streaming SMIB can have one or more connections to live streaming hosts and casino management hosts.

In various embodiments, the live streaming SMIB can include hardware to encode video into one or more suitable video and audio formats for communicating that live streaming data to one or more live streaming hosts or streamer computers.

In various embodiments, the live streaming SMIB can have a display and a user interface that enables the player to use traditional casino functions like viewing player account points.

In various embodiments, the live streaming SMIB can have a display device for stream controls such as, for example, starting and stopping a session, controlling the layout, managing the player captured video in the session, adjusting the video layout, controlling the output of the player face or EGM streams, adjusting volumes, fading or other video transitions, and animations such as the ability for the stream to trigger win animations in the stream.

In various embodiments, the live streaming SMIB can be configured to detect a large win or a specific game event (e.g., a royal flush hand) and insert win celebrations or animations (with or without sound) into the live stream mix. The live streaming SMIB can be configured to do this for



wins, near misses, or consolation animations after one or more losses. In various such embodiments, the live streaming SMIB can do this automatically or can enable the streamer to control such additions to the live stream mix.

In various embodiments, streaming sessions by a streamer can be time-controlled (such as 60 minutes long) and the live streaming SMIB can insert related information such as but not limited to countdowns or other information related to how long the streamer has been streaming or how much time is remaining in the stream.

In various embodiments, the chat and/or mix windows are always in view on the streaming EGM, while in other embodiments the streaming EGM enables the streamer to selectively show or hide those windows for a period of time. For example, if the streamer is about to start a streaming session, the streamer can use the interface to show the streaming mix for a period of time. The streamer can adjust the camera position or settings, seat or sitting position until the streamer is happy with the composition of the streaming mix (i.e., the streamer is in the middle of the video stream) and then the streamer can choose to hide the streaming mix window and start the stream such as the live stream.

It should be appreciated from the above that in various embodiments, while the camera and EGM monitor capturing devices supported by the cabinet of the EGM can be properly positioned for most or many people, some streamers can have their own equipment (such as a preferred or expensive camera and microphone) and thus the embodiments with the output and/or inputs ports account for such situations.

In various embodiment, the components of the system enable the streamer to live stream and engage viewers with back betting as part of the recorded gaming session. The recording can be augmented and edited as described by the streamer, but the streamer cannot change the information required for the back betting. It should also be appreciated that the streaming needs to be live for such back betting to avoid cheating issues.

In various embodiments, the video/audio outputs are only enabled for certain people and must be enabled by the EGM software, host system, or streaming system. In various embodiments, the outputs are enabled based on the streamer's player loyalty account. In this manner, the casino can determine which players are able to use the output and which cannot by recording this ability with the player loyalty account information.

In various embodiments, the streaming video camera and/or microphone is/are only enabled by the EGM, SMIB, streaming system, or host system when the streamer starts a streaming session. The streaming session can be started by using the live streaming SMIB application. Starting the streaming session causes the SMIB to begin capturing and encoding the video from the camera. The SMIB can require that the player login in first or use a player tracking card.

In various embodiments, the system can require the streamer to create and use a streamer account to start and control a streaming session such that the casino would have to enable streaming for the player. This would enable the casino to control who can stream including the ability to revoke streaming for any player who is not eligible or has abused the streaming feature.

In various embodiments, the system can require the streamer to be of a certain tier or ranking in the casino's player loyalty program to begin a stream. In other embodiments, the system can require the streamer to enroll or signup to participate as a streamer (for example, by accepting certain financial or legal agreements), and then once

enrolled, the system can change the streamer's account state in such a way to indicate to the SMIB or EGM that the streamer is eligible to start and control a streaming session such as a live streaming session.

The various above described embodiments have been described in terms of the live streaming SMIB. The present disclosure further contemplates that the above described features can be provided by alternative systems that reduce the functionality of the live streaming SMIB or that eliminate the live streaming SMIB. In various such embodiments, other components or software performs certain of the live streaming SMIB functions described above. Examples of these alternative systems are briefly explained below.

In one such example embodiment shown in FIG. 4A, the system **10000A** includes video encoder hardware (such as an AWS elemental link product such an HDMI encoder **10300A**). This system **10000A** streams the EGM video and audio using the HDMI encoder **10300A**. This system **10000A** eliminates the complexity of the streamer live video and simplifies the use of the live streaming SMIB **10150A**. One issue with this system **10000A** is that the HDMI encoder does not have access to the game outcomes and there cannot encode the outcomes and events of the streaming session into the metadata. This system **10000A** can work with the group session style wagering but can lack the ability to trigger animations and to synchronize the clients and viewers.

In various other embodiments such as shown in FIG. 4B, the system **10000B** can employ video encoder hardware such as future encoder **10300B** to resolve certain the synchronization issues. The video encoder hardware can have a connection or interface with the Live Streaming SMIB where the Live Streaming SMIB can inject events or data into the live stream. A live stream can include metadata (such as metadata called ID3 tags in certain streaming techniques), and a viewer (such an HTML browser) can receive these tags and can perform certain actions based upon those tags. For example, the Live Streaming SMIB can generate a tag when a game outcome is received from the EGM, which can then be injected as metadata into the stream via the connection between the video encoder hardware and the live streaming SMIB. Then, viewers using an HTML browser can have celebration animations synchronized with the streamer winning something.

In various other embodiments such as shown in FIG. 4C, the system **10000C** can employ a standard SMIB **10150C** with an AWS elemental link product such an HDMI encoder **10300C**. This embodiment using a standard SMIB **10150C** that itself does not provide the ability for the streamer to control the session (such as start/stop streaming, etc.). Rather, in this example embodiment, the system **10000C** includes a player mobile device **11000C** to provide that control. In such embodiments, the streamer can use the player mobile device **11000C** to control the live stream and the gaming session. The player could use this player mobile device **11000C** to start/stop the stream. The player could also use this player mobile device **11000C** to start/stop back betting being available. For example, the player may start the stream by telling a story while they are waiting for a sufficient number of viewers to join, and then only once they have finished their story (and possibly a sufficient number of viewers have joined the stream) will the streamer enable back betting. The player can also leverage their mobile device to view the current chat feed (the mobile device would be connected to other services of the gambling live streaming platform).



In various embodiments such as shown in FIG. 4D, the system **10000D** does not employ live streaming SMIB or the player mobile device to control the live stream, but rather employs a standard SMIB **10000D** and a service window displayed by the EGM and provided by a host **12000D** to perform the controls or starting and stopping of the live streaming session. In various such embodiments, the EGM displays in a service window a web browser from the host **12000D**, and the host **12000D** controls the streaming session using the EGM and a suitable user interface. Similar to the above embodiments, the player can start/stop the stream, enable/disable back betting, see the live chat of the stream, learn of gifts they have received, etc.

In various other embodiments such as shown in FIG. 4E, the system **10000E** can employ one or more off the shelf components for the live streaming such as but not limited to a laptop computer, a video capture card, etc. In various such embodiments, the system **10000E** can employ suitable hardware in the streaming EGM such as a live streaming SMIB, and employ one or more suitable browsers **12000E** for the viewers. In various such embodiments, the system can employ non-monetary credits for back betting opportunities. Similar to the above described embodiment, the player's computer can have an interface to control various streaming settings. The streamer can use the computer to setup their stream, login to the GLSP, start a stream, end a stream, enable/disable back betting, view the live chat, view gifts they have received during a stream, etc.

It should be appreciated from the above that various embodiments of the present disclosure provide an electronic gaming machine configured for a streamer and including: (1) a cabinet; (2) a live streaming slot machine interface board supported by the cabinet; (3) a video camera supported by the cabinet and communicatively connected to the slot machine interface board, the video camera configured to capture video of a streamer and to communicate signals representing the captured video to the slot machine interface board; (4) a microphone supported by the cabinet and communicatively connected to the slot machine interface board, the microphone configured to capture audio of the streamer and to communicate signals representing the captured audio to the slot machine interface board; (5) a display device supported by the cabinet, configured to display plays of a wagering game, and configured to additionally display the captured video of the streamer; and (6) a sound producing device supported by the cabinet and configured to produce sounds of the plays of the wagering game. In various such embodiments, the video camera is mounted to a side wall of the cabinet. In various such embodiments, the video camera is moveable relative to the side wall of the cabinet from a use position to a non-use position. In various such embodiments, the video camera is mounted adjacent to the display device. In various such embodiments, the electronic gaming machine includes an input device supported by the cabinet and configured to enable control of the video camera. In various such embodiments, the display device comprises a transmissive display device and the video camera is mounted behind the transmissive display device. In various such embodiments, the electronic gaming machine includes an audio producing device configured to provide the captured audio of the streamer via a different channel than the sound producing device. In various such embodiments, the electronic gaming machine includes an input device supported by the cabinet and configured to enable the streamer to configure a stream mix of the plays of the wagering game and the video of the streamer. In various such embodiments, the electronic gaming machine includes

an input device supported by the cabinet and configured to enable the streamer to configure a live stream mix of the plays of wagering game and the video of the streamer. In various such embodiments, the slot machine interface board is configured to cause a transmission of the live stream mix of the plays of wagering game and the video of the streamer to a remote viewer electronic gaming machine. In various such embodiments, the slot machine interface board is configured to transmit a live stream mix of the displays of the plays of wagering games, the sounds of the plays of the wagering game, the captured video, and the captured audio.

It should further be appreciated from the above that various embodiments of the present disclosure provide an electronic gaming machine configured for a streamer and including: (1) a cabinet; (2) a live streaming slot machine interface board supported the cabinet; (3) a video camera supported by the cabinet and communicatively connected to the slot machine interface board, the video camera configured to capture video of a streamer and to communicate signals representing the captured video to the slot machine interface board; (4) a microphone supported by the cabinet and communicatively connected to the slot machine interface board, the microphone configured to capture audio of the streamer and to communicate signals representing the captured audio to the slot machine interface board; (5) a main display device supported by the cabinet and configured to display plays of a wagering game; (6) a sound producing device supported by the cabinet and configured to produce sounds of the plays of the wagering game; and (7) an auxiliary display device supported by the cabinet and configured to display the video of the streamer captured by video camera. In various such embodiments, the auxiliary display device is mounted to a side wall of the cabinet. In various such embodiments, the auxiliary display device video is moveable relative to the side wall of the cabinet from a use position to a non-use position. In various such embodiments, The electronic gaming machine includes an auxiliary audio producing device supported by the cabinet and configured to provide the audio of the streamer via a different channel than the sound producing device. In various such embodiments, the electronic gaming machine includes an input device supported by the cabinet and configured to enable the streamer to configure a live stream mix of the plays of the wagering game and the captured video of the streamer. In various such embodiments, the auxiliary display device is configured to display a live stream mix of the plays of the wagering game and the captured video of the streamer.

It should further be appreciated from the above that various embodiments of the present disclosure provide an electronic gaming machine configured for a streamer and including: (1) a cabinet; (2) a live streaming slot machine interface board supported by the cabinet; (3) a main display device supported by the cabinet and configured to display plays of a wagering game; (4) a sound producing device supported by the cabinet and configured to produce sounds of the plays of the wagering game; and (5) an output port supported by the cabinet and communicatively connected to the live streaming slot machine interface board, the output port configured to connect to a communication wire connectable to a streamer's computing device and to facilitate communication of data from the live streaming slot machine interface board to the streamer's computing device, wherein the data represents the displays of the plays of the wagering game and the sounds of the plays of the wagering game, wherein the data is in a format that is combinable by the streamer's computing device with captured video and cap-



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tured audio of the streamer to create a live stream mix of the displays of the plays of the wagering games, the sounds of the plays of the wagering game, the captured video, and the captured audio. In various such embodiments, the electronic gaming machine includes a video camera supported by the cabinet and communicatively connected to the slot machine interface board, the video camera configured to capture video of the streamer and to communicate signals representing captured video to the slot machine interface board; and a microphone supported by the cabinet and communicatively connected to the slot machine interface board, the microphone configured to capture audio of the streamer and to communicate signals representing captured audio to the slot machine interface board. In various such embodiments, the output port is configured to facilitate communication of the captured video and the captured audio from the live streaming slot machine interface board to the streamer's computing device.

The above-described embodiments of the present disclosure may be implemented in accordance with or in conjunction with one or more of a variety of different types of systems, such as, but not limited to, those described below.

The present disclosure contemplates a variety of different systems each having one or more of a plurality of different features, attributes, or characteristics. A "streaming device" and/or "client device" as used herein refers to various configurations of: (a) one or more servers; (b) one or more electronic gaming machines; (c) one or more components of a gaming establishment management system associated with an electronic gaming machine, such as a slot machine interface board; and/or (d) one or more personal gaming devices (e.g., desktop computers, laptop computers, tablet computers or computing devices, personal digital assistants, mobile phones, and other mobile computing devices). Thus, in various embodiments, the streaming devices and client devices of the present disclosure include: (a) one or more electronic gaming machines in combination with one or more servers; (b) one or more slot machine interface boards (or other components of a gaming establishment management system) in communication with one or more servers; (c) one or more personal gaming devices in combination with one or more servers; (d) one or more personal gaming devices in combination with one or more electronic gaming machines; (e) one or more personal gaming devices in combination with one or more slot machine interface boards (or other components of a gaming establishment management system); (f) one or more personal gaming devices, one or more electronic gaming machines, one or more slot machine interface boards (or other components of a gaming establishment management system) and one or more servers in combination with one another; (g) a single electronic gaming machine; (h) a plurality of electronic gaming machines in combination with one another; (i) a single personal gaming device; (j) a plurality of personal gaming devices in combination with one another; (k) as single slot machine interface board (or other component of a gaming establishment management system); (l) a plurality of slot machine interface boards (or other components of a gaming establishment management system) in combination with one another; (m) a single server; and/or (n) a plurality of servers in combination with one another. For brevity and clarity and unless specifically stated otherwise, "streaming device" as used herein represents one streaming device or a plurality of streaming devices, "client device" as used herein represents one client device or a plurality of client devices and "server" as used herein represents one server or a plurality of servers.

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As noted above, in various embodiments, the system includes a streaming device and/or a client device in combination with a server. In such embodiments, the streaming device and/or client device is configured to communicate with the server through a data network or remote communication link. In certain such embodiments, the streaming device and/or client device is configured to communicate with another streaming device and/or client device through the same data network or remote communication link or through a different data network or remote communication link.

In various embodiments in which the system includes a streaming device and/or a client device in combination with a server, the server is any suitable computing device (such as a server) that includes at least one processor and at least one memory device or data storage device. As further described herein, the streaming device and/or client device includes at least one streaming device and/or client device processor configured to transmit and receive data or signals representing events, messages, commands, or any other suitable information between the streaming device and/or client device and the server. The at least one processor of that streaming device and/or client device is configured to execute the events, messages, or commands represented by such data or signals in conjunction with the operation of the streaming device and/or client device. Moreover, the at least one processor of the server is configured to transmit and receive data or signals representing events, messages, commands, or any other suitable information between the server and the streaming device and/or client device. The at least one processor of the server is configured to execute the events, messages, or commands represented by such data or signals in conjunction with the operation of the server. One, more than one, or each of the functions of the server may be performed by the at least one processor of the streaming device and/or client device. Further, one, more than one, or each of the functions of the at least one processor of the streaming device and/or client device may be performed by the at least one processor of the server.

In certain such embodiments, computerized instructions for controlling any games (such as any primary or base games and/or any secondary or bonus games) displayed by the streaming device and/or client device are executed by the server. In such "thin client" embodiments, the server remotely controls any games (or other suitable interfaces) displayed by the streaming device and/or client device, and the streaming device and/or client device is utilized to display such games (or suitable interfaces) and to receive one or more inputs or commands. In other such embodiments, computerized instructions for controlling any games displayed by the streaming device and/or client device are communicated from the server to the streaming device and/or client device and are stored in at least one memory device of the streaming device and/or client device. In such "thick client" embodiments, the at least one processor of the streaming device and/or client device executes the computerized instructions to control any games (or other suitable interfaces) displayed by the streaming device and/or client device.

In various embodiments in which the system includes a plurality of streaming devices and/or client devices, one or more of the streaming devices and/or client devices are thin client streaming devices and/or client devices and one or more of the streaming devices and/or client devices are thick client streaming devices and/or client devices. In other embodiments in which the system includes one or more streaming devices and/or client devices, certain functions of



one or more of the streaming devices and/or client devices are implemented in a thin client environment, and certain other functions of one or more of the streaming devices and/or client devices are implemented in a thick client environment. In one such embodiment in which the system includes a streaming device and/or a client device and a server, computerized instructions for controlling any primary or base games displayed by the streaming device and/or client device are communicated from the server to the streaming device and/or client device in a thick client configuration, and computerized instructions for controlling any secondary or bonus games or other functions displayed by the streaming device and/or client device are executed by the server in a thin client configuration.

In various embodiments in which the system includes: (a) a streaming device and/or a client device configured to communicate with a server through a data network; and/or (b) a plurality of streaming devices and/or client devices configured to communicate with one another through a data network, the data network is a local area network (LAN) in which the streaming devices and/or client devices are located substantially proximate to one another and/or the server. In one example, the streaming devices and/or client devices and the server are located in a gaming establishment or a portion of a gaming establishment. In other embodiments in which the system includes: (a) a streaming device and/or a client device configured to communicate with a server through a data network; and/or (b) a plurality of streaming devices and/or client devices configured to communicate with one another through a data network, the data network is a wide area network (WAN) in which one or more of the streaming devices and/or client devices are not necessarily located substantially proximate to another one of the streaming devices and/or client devices and/or the server. For example, one or more of the streaming devices and/or client devices are located: (a) in an area of a gaming establishment different from an area of the gaming establishment in which the server is located; or (b) in a gaming establishment different from the gaming establishment in which the server is located. In another example, the server is not located within a gaming establishment in which the streaming devices and/or client devices are located. In various embodiments in which the data network is a WAN, the system includes a server and a streaming device and/or a client device each located in a different gaming establishment in a same geographic area, such as a same city or a same state. Systems in which the data network is a WAN are substantially identical to systems in which the data network is a LAN, though the quantity of streaming devices and/or client devices in such systems may vary relative to one another.

In further embodiments in which the system includes: (a) a streaming device and/or a client device configured to communicate with a server through a data network; and/or (b) a plurality of streaming devices and/or client devices configured to communicate with one another through a data network, the data network is an internet or an intranet. In certain such embodiments, an internet browser of the streaming device and/or client device is usable to access an internet game page from any location where an internet connection is available. In one such embodiment, after the streaming device and/or client device accesses the internet game page, the server identifies a user before enabling that user to place any wagers on any plays of any wagering games. In one example, the server identifies the user by requiring a user account of the user to be logged into via an input of a unique username and password combination

assigned to the user. The server may, however, identify the user in any other suitable manner, such as by validating a player tracking identification number associated with the user; by reading a player tracking card or other smart card inserted into a card reader (as described below); by validating a unique user identification number associated with the user by the server; or by identifying the streaming device and/or client device, such as by identifying the MAC address or the IP address of the internet facilitator. In various embodiments, once the server identifies the user, the server enables placement of one or more wagers on one or more plays of one or more primary or base games and/or one or more secondary or bonus games, and displays those plays via the internet browser of the streaming device and/or client device.

The server and the streaming device and/or client device are configured to connect to the data network or remote communications link in any suitable manner. In various embodiments, such a connection is accomplished via a conventional phone line or other data transmission line, a digital subscriber line (DSL), a T-1 line, a coaxial cable, a fiber optic cable, a wireless or wired routing device, a mobile communications network connection (such as a cellular network or mobile internet network), or any other suitable medium.

FIG. 5 is a block diagram of an example streaming device and/or client device **1000** and FIGS. 6A and 6B include two different example streaming devices and/or client devices **2000a** and **2000b**. The streaming devices and/or client devices **1000**, **2000a**, and **2000b** are merely example streaming devices and/or client devices, and different streaming devices and/or client devices may be implemented using different combinations of the components shown in the streaming devices and/or the client devices **1000**, **2000a**, and **2000b**. Although the below refers to streaming devices and/or client devices, in various embodiments personal gaming devices (such as personal gaming device **2000c** of FIG. 6C) may include some or all of the below components.

In these embodiments, the streaming device and/or the client device **1000** includes a master gaming controller **1012** configured to communicate with and to operate with a plurality of peripheral devices **1022**.

The master gaming controller **1012** includes at least one processor **1010**. The at least one processor **1010** is any suitable processing device or set of processing devices, such as a microprocessor, a microcontroller-based platform, a suitable integrated circuit, or one or more application-specific integrated circuits (ASICs), configured to execute software enabling various configuration and reconfiguration tasks, such as: (1) communicating with a remote source (such as a server that stores authentication information or game information) via a communication interface **1006** of the master gaming controller **1012**; (2) converting signals read by an interface to a format corresponding to that used by software or memory of the streaming device and/or the client device; (3) accessing memory to configure or reconfigure game parameters in the memory according to indicia read from the streaming device and/or the client device; (4) communicating with interfaces and the peripheral devices **1022** (such as input/output devices); and/or (5) controlling the peripheral devices **1022**. In various embodiments, one or more components of the master gaming controller **1012** (such as the at least one processor **1010**) reside within a housing of the streaming device and/or the client device (described below), while in other embodiments at least one



component of the master gaming controller **1012** resides outside of the housing of the streaming device and/or the client device.

The master gaming controller **1012** also includes at least one memory device **1016**, which includes: (1) volatile memory (e.g., RAM **1009**, which can include non-volatile RAM, magnetic RAM, ferroelectric RAM, and any other suitable forms); (2) non-volatile memory **1019** (e.g., disk memory, FLASH memory, EPROMs, EEPROMs, memristor-based non-volatile solid-state memory, etc.); (3) unalterable memory (e.g., EPROMs **1008**); (4) read-only memory; and/or (5) a secondary memory storage device **1015**, such as a non-volatile memory device, configured to store gaming software related information (the gaming software related information and the memory may be used to store various audio files and games not currently being used and invoked in a configuration or reconfiguration). Any other suitable magnetic, optical, and/or semiconductor memory may operate in conjunction with the streaming device and/or the client device of the present disclosure. In various embodiments, the at least one memory device **1016** resides within the housing of the streaming device and/or the client device (described below), while in other embodiments at least one component of the at least one memory device **1016** resides outside of the housing of the streaming device and/or the client device.

The at least one memory device **1016** is configured to store, for example: (1) configuration software **1014**, such as all the parameters and settings for a game playable on the streaming device and/or the client device; (2) associations **1018** between configuration indicia read from a streaming device and/or a client device with one or more parameters and settings; (3) communication protocols configured to enable the at least one processor **1010** to communicate with the peripheral devices **1022**; and/or (4) communication transport protocols (such as TCP/IP, USB, Firewire, IEEE1394, Bluetooth, IEEE 802.11x (IEEE 802.11 standards), hiperlan/2, HomeRF, etc.) configured to enable the streaming device and/or the client device to communicate with local and non-local devices using such protocols. In one implementation, the master gaming controller **1012** communicates with other devices using a serial communication protocol. A few non-limiting examples of serial communication protocols that other devices, such as peripherals (e.g., a bill validator or a ticket printer), may use to communicate with the master game controller **1012** include USB, RS-232, and Netplex (a proprietary protocol developed by IGT).

As will be appreciated by one skilled in the art, aspects of the present disclosure may be illustrated and described herein in any of a number of patentable classes or context including any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof. Accordingly, aspects of the present disclosure may be implemented entirely hardware, entirely software (including firmware, resident software, microcode, etc.) or combining software and hardware implementation that may all generally be referred to herein as a "circuit," "module," "component," or "system." Furthermore, aspects of the present disclosure may take the form of a computer program product embodied in one or more computer readable media having computer readable program code embodied thereon.

Computer program code for carrying out operations for aspects of the present disclosure may be written in any combination of one or more programming languages, including an object oriented programming language such as Java, Scala, Smalltalk, Eiffel, JADE, Emerald, C++, C#,

VB.NET, Python or the like, conventional procedural programming languages, such as the "C" programming language, Visual Basic, Fortran 2003, Perl, COBOL 2002, PHP, ABAP, dynamic programming languages such as Python, Ruby and Groovy, or other programming languages. The program code may execute entirely on the user's computer, partly on the user's computer, as a stand-alone software package, partly on the user's computer and partly on a remote computer or entirely on the remote computer or server. In the latter scenario, the remote computer may be connected to the user's computer through any type of network, including a local area network (LAN) or a wide area network (WAN), or the connection may be made to an external computer (for example, through the internet using an internet Service Provider) or in a cloud computing environment or offered as a service such as a Software as a Service (SaaS).

Aspects of the present disclosure are described herein with reference to flowchart illustrations and/or block diagrams of methods, apparatuses (systems) and computer program products according to embodiments of the disclosure. It will be understood that each block of the flowchart illustrations and/or block diagrams, and combinations of blocks in the flowchart illustrations and/or block diagrams, can be implemented by computer program instructions. These computer program instructions may be provided to a processor of a general purpose computer, special purpose computer, or other programmable data processing apparatus to produce a machine, such that the instructions, which execute via the processor of the computer or other programmable instruction execution apparatus, create a mechanism for implementing the functions/acts specified in the flowchart and/or block diagram block or blocks.

These computer program instructions may also be stored in a computer readable medium that when executed can direct a computer, other programmable data processing apparatus, or other devices to function in a particular manner, such that the instructions when stored in the computer readable medium produce an article of manufacture including instructions which when executed, cause a computer to implement the function/act specified in the flowchart and/or block diagram block or blocks. The computer program instructions may also be loaded onto a computer, other programmable instruction execution apparatus, or other devices to cause a series of operational steps to be performed on the computer, other programmable apparatuses or other devices to produce a computer implemented process such that the instructions which execute on the computer or other programmable apparatus provide processes for implementing the functions/acts specified in the flowchart and/or block diagram block or blocks.

In various embodiments, the at least one memory device **1016** is configured to store program code and instructions executable by the at least one processor of the streaming device and/or the client device to control the streaming device and/or the client device. The at least one memory device **1016** of the streaming device and/or the client device also stores other operating data, such as image data, event data, input data, random number generators (RNGs) or pseudo-RNGs, payable data or information, and/or applicable game rules that relate to the play of one or more games on the streaming device and/or the client device. In various embodiments, part or all of the program code and/or the operating data described above is stored in at least one detachable or removable memory device including, but not limited to, a cartridge, a disk, a CD ROM, a DVD, a USB memory device, or any other suitable non-transitory com-



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puter readable medium. In certain such embodiments, an operator (such as a gaming establishment operator) and/or a user uses such a removable memory device in a streaming device and/or a client device to implement at least part of the present disclosure. In other embodiments, part or all of the program code and/or the operating data is downloaded to the at least one memory device of the streaming device and/or the client device through any suitable data network described above (such as an internet or intranet).

The at least one memory device **1016** also stores a plurality of device drivers **1042**. Examples of different types of device drivers include device drivers for streaming device and/or client device components and device drivers for the peripheral components **1022**. Typically, the device drivers **1042** utilize various communication protocols that enable communication with a particular physical device. The device driver abstracts the hardware implementation of that device. For example, a device driver may be written for each type of card reader that could potentially be connected to the streaming device and/or the client device. Non-limiting examples of communication protocols used to implement the device drivers include Netplex, USB, Serial, Ethernet **175**, Firewire, I/O debouncer, direct memory map, serial, PCI, parallel, RF, Bluetooth™, near-field communications (e.g., using near-field magnetics), 802.11 (WiFi), etc. In one embodiment, when one type of a particular device is exchanged for another type of the particular device, the at least one processor of the streaming device and/or the client device loads the new device driver from the at least one memory device to enable communication with the new device. For instance, one type of card reader in the streaming device and/or the client device can be replaced with a second different type of card reader when device drivers for both card readers are stored in the at least one memory device.

In various embodiments, the software units stored in the at least one memory device **1016** can be upgraded as needed. For instance, when the at least one memory device **1016** is a hard drive, new games, new game options, new parameters, new settings for existing parameters, new settings for new parameters, new device drivers, and new communication protocols can be uploaded to the at least one memory device **1016** from the master game controller **1012** or from some other external device. As another example, when the at least one memory device **1016** includes a CD/DVD drive including a CD/DVD configured to store game options, parameters, and settings, the software stored in the at least one memory device **1016** can be upgraded by replacing a first CD/DVD with a second CD/DVD. In yet another example, when the at least one memory device **1016** uses flash memory **1019** or EPROM **1008** units configured to store games, game options, parameters, and settings, the software stored in the flash and/or EPROM memory units can be upgraded by replacing one or more memory units with new memory units that include the upgraded software. In another embodiment, one or more of the memory devices, such as the hard drive, may be employed in a game software download process from a remote software server.

In some embodiments, the at least one memory device **1016** also stores authentication and/or validation components **1044** configured to authenticate/validate specified streaming device and/or client device components and/or information, such as hardware components, software components, firmware components, peripheral device components, user input device components, information received from one or more user input devices, information stored in the at least one memory device **1016**, etc.

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In various embodiments, the peripheral devices **1022** include several device interfaces, such as: (1) at least one output device **1020** including at least one display device **1035**; (2) at least one input device **1030** (which may include contact and/or non-contact interfaces); (3) at least one transponder **1054**; (4) at least one wireless communication component **1056**; (5) at least one wired/wireless power distribution component **1058**; (6) at least one sensor **1060**; (7) at least one data preservation component **1062**; (8) at least one motion/gesture analysis and interpretation component **1064**; (9) at least one motion detection component **1066**; (10) at least one portable power source **1068**; (11) at least one geolocation module **1076**; (12) at least one user identification module **1077**; (13) at least one user/device tracking module **1078**; and (14) at least one information filtering module **1079**.

The at least one output device **1020** includes at least one display device **1035** configured to display any game(s) displayed by the streaming device and/or the client device and any suitable information associated with such game(s). In various embodiments, the display devices are connected to or mounted on a housing of the streaming device and/or the client device (described below). In various embodiments, the display devices serve as digital glass configured to advertise certain games or other aspects of the gaming establishment in which the streaming device and/or the client device is located. In various embodiments, the streaming device and/or the client device includes one or more of the following display devices: (a) a central display device; (b) a player tracking display configured to display various information regarding a user's player tracking status (as described below); (c) a secondary or upper display device in addition to the central display device and the player tracking display; (d) a credit display configured to display a current quantity of credits, amount of cash, account balance, or the equivalent; and (e) a bet display configured to display an amount wagered for one or more plays of one or more games. The example streaming device and/or client device **2000a** illustrated in FIG. 6A includes a central display device **2116**, a player tracking display **2140**, a credit display **2120**, and a bet display **2122**. The example streaming device and/or client device **2000b** illustrated in FIG. 6B includes a central display device **2116**, an upper display device **2118**, a player tracking display **2140**, a credit display **2120**, and a bet display **2122**.

In various embodiments, the display devices include, without limitation: a monitor, a television display, a plasma display, a liquid crystal display (LCD), a display based on light emitting diodes (LEDs), a display based on a plurality of organic light-emitting diodes (OLEDs), a display based on polymer light-emitting diodes (PLEDs), a display based on a plurality of surface-conduction electron-emitters (SEDs), a display including a projected and/or reflected image, or any other suitable electronic device or display mechanism. In various embodiments, as described above, the display device includes a touch-screen with an associated touch-screen controller. The display devices may be of any suitable sizes, shapes, and configurations.

The display devices of the streaming device and/or the client device are configured to display one or more game and/or non-game images, symbols, and indicia. In various embodiments, the display devices of the streaming device and/or the client device are configured to display any suitable visual representation or exhibition of the movement of objects; dynamic lighting; video images; images of people, characters, places, things, and faces of cards; and the like. In various embodiments, the display devices of the



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streaming device and/or the client device are configured to display one or more video reels, one or more video wheels, and/or one or more video dice. In other embodiments, certain of the displayed images, symbols, and indicia are in mechanical form. That is, in these embodiments, the display device includes any electromechanical device, such as one or more rotatable wheels, one or more reels, and/or one or more dice, configured to display at least one or a plurality of game or other suitable images, symbols, or indicia.

In various embodiments, the at least one output device **1020** includes a payout device. In these embodiments, after the streaming device and/or the client device receives an actuation of a cashout device (described below), the streaming device and/or the client device causes the payout device to provide a payment to the user. In one embodiment, the payout device is one or more of: (a) a ticket printer and dispenser configured to print and dispense a ticket or credit slip associated with a monetary value, wherein the ticket or credit slip may be redeemed for its monetary value via a cashier, a kiosk, or other suitable redemption system; (b) a bill dispenser configured to dispense paper currency; (c) a coin dispenser configured to dispense coins or tokens (such as into a coin payout tray); and (d) any suitable combination thereof. The example streaming devices and/or client devices **2000a** and **2000b** illustrated in FIGS. **6A** and **6B** each include a ticket printer and dispenser **2136**.

In various embodiments, rather than dispensing bills, coins, or a physical ticket having a monetary value to the user following receipt of an actuation of the cashout device, the payout device is configured to cause a payment to be provided to the user in the form of an electronic funds transfer, such as via a direct deposit into a bank account, a casino account, or a prepaid account of the user; via a transfer of funds onto an electronically recordable identification card or smart card of the user; or via sending a virtual ticket having a monetary value to an electronic device of the user. While any credit balances, any wagers, any values, and any awards are described herein as amounts of monetary credits or currency, one or more of such credit balances, such wagers, such values, and such awards may be for non-monetary credits, promotional credits, of player tracking points or credits.

In various embodiments, the at least one output device **1020** is a sound generating device controlled by one or more sound cards. In one such embodiment, the sound generating device includes one or more speakers or other sound generating hardware and/or software configured to generate sounds, such as by playing music for any games or by playing music for other modes of the streaming device and/or the client device, such as an attract mode. The example streaming devices and/or client devices **2000a** and **2000b** illustrated in FIGS. **6A** and **6B** each include a plurality of speakers **2150**. In another such embodiment, the streaming device and/or the client device provides dynamic sounds coupled with attractive multimedia images displayed on one or more of the display devices to provide an audio-visual representation or to otherwise display full-motion video with sound to attract users to the streaming device and/or the client device. In various embodiments, the streaming device and/or the client device displays a sequence of audio and/or visual attraction messages during idle periods to attract potential users to the streaming device and/or the client device. The videos may be customized to provide any appropriate information.

The at least one input device **1030** may include any suitable device that enables an input signal to be produced

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and received by the at least one processor **1010** of the streaming device and/or the client device.

In one embodiment, the at least one input device **1030** includes a payment device configured to communicate with the at least one processor of the streaming device and/or the client device to fund the streaming device and/or the client device. In various embodiments, the payment device includes one or more of: (a) a bill acceptor into which paper money is inserted to fund the streaming device and/or the client device; (b) a ticket acceptor into which a ticket or a voucher is inserted to fund the streaming device and/or the client device; (c) a coin slot into which coins or tokens are inserted to fund the streaming device and/or the client device; (d) a reader or a validator for credit cards, debit cards, or credit slips into which a credit card, debit card, or credit slip is inserted to fund the streaming device and/or the client device; (e) a user identification card reader into which a user identification card is inserted to fund the streaming device and/or the client device; or (f) any suitable combination thereof. The example streaming devices and/or client devices **2000a** and **2000b** illustrated in FIGS. **6A** and **6B** each include a combined bill and ticket acceptor **2128** and a coin slot **2126**.

In one embodiment, the at least one input device **1030** includes a payment device configured to enable the streaming device and/or the client device to be funded via an electronic funds transfer, such as a transfer of funds from a bank account. In another embodiment, the streaming device and/or the client device includes a payment device configured to communicate with a mobile device of a user, such as a mobile phone, a radio frequency identification tag, or any other suitable wired or wireless device, to retrieve relevant information associated with that user to fund the streaming device and/or the client device. When the streaming device and/or the client device is funded, the at least one processor determines the amount of funds entered and displays the corresponding amount on a credit display or any other suitable display as described below.

In various embodiments, the at least one input device **1030** includes at least one wagering or betting device. In various embodiments, the one or more wagering or betting devices are each: (1) a mechanical button supported by the housing of the streaming device and/or the client device (such as a hard key or a programmable soft key), or (2) an icon displayed on a display device of the streaming device and/or the client device (described below) that is actuatable via a touch screen of the streaming device and/or the client device (described below) or via use of a suitable input device of the streaming device and/or the client device (such as a mouse or a joystick). One such wagering or betting device is as a maximum wager or bet device that, when actuated, causes the streaming device and/or the client device to place a maximum wager on a play of a game. Another such wagering or betting device is a repeat bet device that, when actuated, causes the streaming device and/or the client device to place a wager that is equal to the previously-placed wager on a play of a game. A further such wagering or betting device is a bet one device that, when actuated, causes the streaming device and/or the client device to increase the wager by one credit. Generally, upon actuation of one of the wagering or betting devices, the quantity of credits displayed in a credit meter (described below) decreases by the amount of credits wagered, while the quantity of credits displayed in a bet display (described below) increases by the amount of credits wagered.

In various embodiments, the at least one input device **1030** includes at least one game play activation device. In



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various embodiments, the one or more game play initiation devices are each: (1) a mechanical button supported by the housing of the streaming device and/or the client device (such as a hard key or a programmable soft key), or (2) an icon displayed on a display device of the streaming device and/or the client device (described below) that is actuatable via a touch screen of the streaming device and/or the client device (described below) or via use of a suitable input device of the streaming device and/or the client device (such as a mouse or a joystick). After a user appropriately funds the streaming device and/or the client device and places a wager, the streaming device and/or the client device activates the game play activation device to enable the user to actuate the game play activation device to initiate a play of a game on the streaming device and/or the client device (or another suitable sequence of events associated with the streaming device and/or the client device). After the streaming device and/or the client device receives an actuation of the game play activation device, the streaming device and/or the client device initiates the play of the game. The example streaming devices and/or client devices **2000a** and **2000b** illustrated in FIGS. **6A** and **6B** each include a game play activation device in the form of a game play initiation button **2132**. In other embodiments, the streaming device and/or the client device begins game play automatically upon appropriate funding rather than upon utilization of the game play activation device.

In other embodiments, the at least one input device **1030** includes a cashout device. In various embodiments, the cashout device is: (1) a mechanical button supported by the housing of the streaming device and/or the client device (such as a hard key or a programmable soft key), or (2) an icon displayed on a display device of the streaming device and/or the client device (described below) that is actuatable via a touch screen of the streaming device and/or the client device (described below) or via use of a suitable input device of the streaming device and/or the client device (such as a mouse or a joystick). When the streaming device and/or the client device receives an actuation of the cashout device from a user and the user has a positive (i.e., greater-than-zero) credit balance, the streaming device and/or the client device initiates a payout associated with the user's credit balance. The example streaming devices and/or client devices **2000a** and **2000b** illustrated in FIGS. **6A** and **6B** each include a cashout device in the form of a cashout button **2134**.

In various embodiments, the at least one input device **1030** includes a plurality of buttons that are programmable by the streaming device and/or the client device operator to, when actuated, cause the streaming device and/or the client device to perform particular functions. For instance, such buttons may be hard keys, programmable soft keys, or icons icon displayed on a display device of the streaming device and/or the client device (described below) that are actuatable via a touch screen of the streaming device and/or the client device (described below) or via use of a suitable input device of the streaming device and/or the client device (such as a mouse or a joystick). The example streaming devices and/or client devices **2000a** and **2000b** illustrated in FIGS. **6A** and **6B** each include a plurality of such buttons **2130**.

In various embodiments, the at least one input device **1030** includes a touch-screen coupled to a touch-screen controller or other touch-sensitive display overlay to enable interaction with any images displayed on a display device (as described below). One such input device is a conventional touch-screen button panel. The touch-screen and the touch-screen controller are connected to a video controller.

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In these embodiments, signals are input to the streaming device and/or the client device by touching the touch screen at the appropriate locations.

In embodiments including a player tracking system, as further described below, the at least one input device **1030** includes a card reader in communication with the at least one processor of the streaming device and/or the client device. The example streaming devices and/or client devices **2000a** and **2000b** illustrated in FIGS. **6A** and **6B** each include a card reader **2138**. The card reader is configured to read a user identification card inserted into the card reader.

The at least one wireless communication component **1056** includes one or more communication interfaces having different architectures and utilizing a variety of protocols, such as (but not limited to) 802.11 (WiFi); 802.15 (including Bluetooth™); 802.16 (WiMax); 802.22; cellular standards such as CDMA, CDMA2000, and WCDMA; Radio Frequency (e.g., RFID); infrared; and Near Field Magnetic communication protocols. The at least one wireless communication component **1056** transmits electrical, electromagnetic, or optical signals that carry digital data streams or analog signals representing various types of information.

The at least one wired/wireless power distribution component **1058** includes components or devices that are configured to provide power to other devices. For example, in one embodiment, the at least one power distribution component **1058** includes a magnetic induction system that is configured to provide wireless power to one or more user input devices near the streaming device and/or the client device. In one embodiment, a user input device docking region is provided, and includes a power distribution component that is configured to recharge a user input device without requiring metal-to-metal contact. In one embodiment, the at least one power distribution component **1058** is configured to distribute power to one or more internal components of the streaming device and/or the client device, such as one or more rechargeable power sources (e.g., rechargeable batteries) located at the streaming device and/or the client device.

In various embodiments, the at least one sensor **1060** includes at least one of: optical sensors, pressure sensors, RF sensors, infrared sensors, image sensors, thermal sensors, and biometric sensors. The at least one sensor **1060** may be used for a variety of functions, such as: detecting movements and/or gestures of various objects within a predetermined proximity to the streaming device and/or the client device; detecting the presence and/or identity of various persons (e.g., users, casino employees, etc.), devices (e.g., user input devices), and/or systems within a predetermined proximity to the streaming device and/or the client device.

The at least one data preservation component **1062** is configured to detect or sense one or more events and/or conditions that, for example, may result in damage to the streaming device and/or the client device and/or that may result in loss of information associated with the streaming device and/or the client device. Additionally, the data preservation system **1062** may be operable to initiate one or more appropriate action(s) in response to the detection of such events/conditions.

The at least one motion/gesture analysis and interpretation component **1064** is configured to analyze and/or interpret information relating to detected user movements and/or gestures to determine appropriate user input information relating to the detected user movements and/or gestures. For example, in one embodiment, the at least one motion/gesture analysis and interpretation component **1064** is configured to perform one or more of the following functions: analyze the



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detected gross motion or gestures of a user; interpret the user's motion or gestures (e.g., in the context of a casino game being played) to identify instructions or input from the user; utilize the interpreted instructions/input to advance the game state; etc. In other embodiments, at least a portion of these additional functions may be implemented at a remote system or device.

The at least one portable power source **1068** enables the streaming device and/or the client device to operate in a mobile environment. For example, in one embodiment, the streaming device and/or the client device **300** includes one or more rechargeable batteries.

The at least one geolocation module **1076** is configured to acquire geolocation information from one or more remote sources and use the acquired geolocation information to determine information relating to a relative and/or absolute position of the streaming device and/or the client device. For example, in one implementation, the at least one geolocation module **1076** is configured to receive GPS signal information for use in determining the position or location of the streaming device and/or the client device. In another implementation, the at least one geolocation module **1076** is configured to receive multiple wireless signals from multiple remote devices (e.g., streaming devices and/or client devices, servers, wireless access points, etc.) and use the signal information to compute position/location information relating to the position or location of the streaming device and/or the client device.

The at least one user identification module **1077** is configured to determine the identity of the current user or current owner of the streaming device and/or the client device. For example, in one embodiment, the current user is required to perform a login process at the streaming device and/or the client device in order to access one or more features. Alternatively, the streaming device and/or the client device is configured to automatically determine the identity of the current user based on one or more external signals, such as an RFID tag or badge worn by the current user and that provides a wireless signal to the streaming device and/or the client device that is used to determine the identity of the current user. In at least one embodiment, various security features are incorporated into the streaming device and/or the client device to prevent unauthorized users from accessing confidential or sensitive information.

The at least one information filtering module **1079** is configured to perform filtering (e.g., based on specified criteria) of selected information to be displayed at one or more displays **1035** of the streaming device and/or the client device.

In various embodiments, the streaming device and/or the client device includes a plurality of communication ports configured to enable the at least one processor of the streaming device and/or the client device to communicate with and to operate with external peripherals, such as: accelerometers, arcade sticks, bar code readers, bill validators, biometric input devices, bonus devices, button panels, card readers, coin dispensers, coin hoppers, display screens or other displays or video sources, expansion buses, information panels, keypads, lights, mass storage devices, microphones, motion sensors, motors, printers, reels, SCSI ports, solenoids, speakers, thumbsticks, ticket readers, touch screens, trackballs, touchpads, wheels, and wireless communication devices.

As generally described above, in various embodiments, such as the example streaming devices and/or client devices **2000a** and **2000b** illustrated in FIGS. **6A** and **6B**, the streaming device and/or the client device has a support

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structure, housing, or cabinet that provides support for a plurality of the input devices and the output devices of the streaming device and/or the client device. Further, the streaming device and/or the client device is configured such that a user may operate it while standing or sitting. In various embodiments, the streaming device and/or the client device is positioned on a base or stand, or is configured as a pub-style tabletop game (not shown) that a user may operate typically while sitting. As illustrated by the different example streaming devices and/or client devices **2000a** and **2000b** shown in FIGS. **6A** and **6B**, streaming devices and/or client devices may have varying housing and display configurations.

In various embodiments, the streaming device and/or the client device is a device that has obtained approval from a regulatory gaming commission, and in other embodiments, the streaming device and/or the client device is a device that has not obtained approval from a regulatory gaming commission.

The streaming devices and/or client devices described above are merely three examples of different types of streaming devices and/or client devices. Certain of these example streaming devices and/or client devices may include one or more elements that may not be included in all systems, and these example streaming devices and/or client devices may not include one or more elements that are included in other systems. For example, certain streaming devices and/or client devices include a coin acceptor while others do not.

In various embodiments, a streaming device and/or a client device may be implemented in one of a variety of different configurations. In various embodiments, the streaming device and/or the client device may be implemented as one of: (a) a dedicated streaming device and/or client device in which computerized game programs executable by the streaming device and/or the client device for controlling any primary or base games (referred to herein as "primary games") and/or any secondary or bonus games or other functions (referred to herein as "secondary games") displayed by the streaming device and/or the client device are provided with the streaming device and/or the client device before delivery to a gaming establishment or before being provided to a user; and (b) a changeable streaming device and/or client device in which computerized game programs executable by the streaming device and/or the client device for controlling any primary games and/or secondary games displayed by the streaming device and/or the client device are downloadable or otherwise transferred to the streaming device and/or the client device through a data network or remote communication link; from a USB drive, flash memory card, or other suitable memory device; or in any other suitable manner after the streaming device and/or the client device is physically located in a gaming establishment or after the streaming device and/or the client device is provided to a user.

As generally explained above, in various embodiments in which the system includes a server and a changeable streaming device and/or client device, the at least one memory device of the server stores different game programs and instructions executable by the at least one processor of the changeable streaming device and/or client device to control one or more primary games and/or secondary games displayed by the changeable streaming device and/or client device. More specifically, each such executable game program represents a different game or a different type of game that the at least one changeable streaming device and/or client device is configured to operate. In one example,



certain of the game programs are executable by the changeable streaming device and/or client device to operate games having the same or substantially the same game play but different paytables. In different embodiments, each executable game program is associated with a primary game, a secondary game, or both. In various embodiments, an executable game program is executable by the at least one processor of the at least one changeable streaming device and/or client device as a secondary game to be played simultaneously with a play of a primary game (which may be downloaded to or otherwise stored on the at least one changeable streaming device and/or client device), or vice versa.

In operation of such embodiments, the server is configured to communicate one or more of the stored executable game programs to the at least one processor of the changeable streaming device and/or client device. In different embodiments, a stored executable game program is communicated or delivered to the at least one processor of the changeable streaming device and/or client device by: (a) embedding the executable game program in a device or a component (such as a microchip to be inserted into the changeable streaming device and/or client device); (b) writing the executable game program onto a disc or other media; or (c) uploading or streaming the executable game program over a data network (such as a dedicated data network). After the executable game program is communicated from the server to the changeable streaming device and/or client device, the at least one processor of the changeable streaming device and/or client device executes the executable game program to enable the primary game and/or the secondary game associated with that executable game program to be played using the display device(s) and/or the input device(s) of the changeable streaming device and/or client device. That is, when an executable game program is communicated to the at least one processor of the changeable streaming device and/or client device, the at least one processor of the changeable streaming device and/or client device changes the game or the type of game that may be played using the changeable streaming device and/or client device.

In various embodiments, the system randomly determines any game outcome(s) (such as a win outcome) and/or award(s) (such as a quantity of credits to award for the win outcome) for a play of a primary game and/or a play of a secondary game based on probability data. In certain such embodiments, this random determination is provided through utilization of an RNG, such as a true RNG or a pseudo RNG, or any other suitable randomization process. In one such embodiment, each game outcome or award is associated with a probability, and the system generates the game outcome(s) and/or the award(s) to be provided based on the associated probabilities. In these embodiments, since the system generates game outcomes and/or awards randomly or based on one or more probability calculations, there is no certainty that the system will ever provide any specific game outcome and/or award.

In various embodiments, the system maintains one or more predetermined pools or sets of predetermined game outcomes and/or awards. In certain such embodiments, upon generation or receipt of a game outcome and/or award request, the system independently selects one of the predetermined game outcomes and/or awards from the one or more pools or sets. The system flags or marks the selected game outcome and/or award as used. Once a game outcome or an award is flagged as used, it is prevented from further selection from its respective pool or set; that is, the system does not select that game outcome or award upon another

game outcome and/or award request. The system provides the selected game outcome and/or award.

In various embodiments, the system determines a predetermined game outcome and/or award based on the results of a bingo, keno, or lottery game. In certain such embodiments, the system utilizes one or more bingo, keno, or lottery games to determine the predetermined game outcome and/or award provided for a primary game and/or a secondary game. The system is provided or associated with a bingo card. Each bingo card consists of a matrix or array of elements, wherein each element is designated with separate indicia. After a bingo card is provided, the system randomly selects or draws a plurality of the elements. As each element is selected, a determination is made as to whether the selected element is present on the bingo card. If the selected element is present on the bingo card, that selected element on the provided bingo card is marked or flagged. This process of selecting elements and marking any selected elements on the provided bingo cards continues until one or more predetermined patterns are marked on one or more of the provided bingo cards. After one or more predetermined patterns are marked on one or more of the provided bingo cards, game outcome and/or award is determined based, at least in part, on the selected elements on the provided bingo cards.

In various embodiments in which the system includes a server and a streaming device and/or a client device, the streaming device and/or the client device is configured to communicate with the server for monitoring purposes only. In such embodiments, the streaming device and/or the client device determines the game outcome(s) and/or award(s) to be provided in any of the manners described above, and the server monitors the activities and events occurring on the streaming device and/or the client device. In one such embodiment, the system includes a real-time or online accounting and gaming information system configured to communicate with the server. In this embodiment, the accounting and gaming information system includes: (a) a user database configured to store user profiles, (b) a player tracking module configured to track users (as described below), and (c) a credit system configured to provide automated transactions.

As noted above, in various embodiments, the system includes one or more executable game programs executable by at least one processor of the system to provide one or more primary games and one or more secondary games. The primary game(s) and the secondary game(s) may comprise any suitable games and/or wagering games, such as, but not limited to: electro-mechanical or video slot or spinning reel type games; video card games such as video draw poker, multi-hand video draw poker, other video poker games, video blackjack games, and video baccarat games; video keno games; video bingo games; and video selection games.

In various embodiments in which the primary game is a slot or spinning reel type game, the system includes one or more reels in either an electromechanical form with mechanical rotating reels or in a video form with simulated reels and movement thereof. Each reel displays a plurality of indicia or symbols, such as bells, hearts, fruits, numbers, letters, bars, or other images that typically correspond to a theme associated with the system. In certain such embodiments, the system includes one or more paylines associated with the reels. The example streaming device and/or client device **2000b** shown in FIG. **6B** includes a payline **2152** and a plurality of reels **2154**. In various embodiments, one or more of the reels are independent reels or unisymbol reels. In such embodiments, each independent reel generates and displays one symbol.



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In various embodiments, one or more of the paylines is horizontal, vertical, circular, diagonal, angled, or any suitable combination thereof. In other embodiments, each of one or more of the paylines is associated with a plurality of adjacent symbol display areas on a requisite number of adjacent reels. In one such embodiment, one or more paylines are formed between at least two symbol display areas that are adjacent to each other by either sharing a common side or sharing a common corner (i.e., such paylines are connected paylines). The system enables a wager to be placed on one or more of such paylines to activate such paylines. In other embodiments in which one or more paylines are formed between at least two adjacent symbol display areas, the system enables a wager to be placed on a plurality of symbol display areas, which activates those symbol display areas.

In various embodiments, the system provides one or more awards after a spin of the reels when specified types and/or configurations of the indicia or symbols on the reels occur on an active payline or otherwise occur in a winning pattern, occur on the requisite number of adjacent reels, and/or occur in a scatter pay arrangement. In various embodiments, the system employs a ways to win award determination. In these embodiments, any outcome to be provided is determined based on a number of associated symbols that are generated in active symbol display areas on the requisite number of adjacent reels (i.e., not on paylines passing through any displayed winning symbol combinations). If a winning symbol combination is generated on the reels, one award for that occurrence of the generated winning symbol combination is provided. In various embodiments, the system includes a progressive award. Typically, a progressive award includes an initial amount and an additional amount funded through a portion of each wager placed to initiate a play of a primary game. When one or more triggering events occurs, the system provides at least a portion of the progressive award. After the system provides the progressive award, an amount of the progressive award is reset to the initial amount and a portion of each subsequent wager is allocated to the next progressive award.

As generally noted above, in addition to providing winning credits or other awards for one or more plays of the primary game(s), in various embodiments the system provides credits or other awards for one or more plays of one or more secondary games. The secondary game typically enables an award to be obtained in addition to any award obtained through play of the primary game(s). The secondary game(s) typically produces a higher level of user excitement than the primary game(s) because the secondary game(s) provides a greater expectation of winning than the primary game(s) and is accompanied with more attractive or unusual features than the primary game(s). The secondary game(s) may be any type of suitable game, either similar to or completely different from the primary game. In various embodiments, the system automatically provides or initiates the secondary game upon the occurrence of a triggering event or the satisfaction of a qualifying condition. In other embodiments, the system initiates the secondary game upon the occurrence of the triggering event or the satisfaction of the qualifying condition and upon receipt of an initiation input. In various embodiments, the triggering event or qualifying condition is a selected outcome in the primary game(s) or a particular arrangement of one or more indicia on a display device for a play of the primary game(s), such as a "BONUS" symbol appearing on three adjacent reels along a payline following a spin of the reels for a play of the primary game. In other embodiments, the triggering event or

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qualifying condition occurs based on a certain amount of game play (such as number of games, number of credits, amount of time) being exceeded, or based on a specified number of points being earned during game play. Any suitable triggering event or qualifying condition or any suitable combination of a plurality of different triggering events or qualifying conditions may be employed.

In other embodiments, at least one processor of the system randomly determines when to provide one or more plays of one or more secondary games. In one such embodiment, no apparent reason is provided for providing the secondary game. In this embodiment, qualifying for a secondary game is not triggered by the occurrence of an event in any primary game or based specifically on any of the plays of any primary game. That is, qualification is provided without any explanation or, alternatively, with a simple explanation. In another such embodiment, the system determines qualification for a secondary game at least partially based on a game triggered or symbol triggered event, such as at least partially based on play of a primary game. In various embodiments, after qualification for a secondary game has been determined, the secondary game participation may be enhanced through continued play on the primary game. Thus, in various embodiments, for each secondary game qualifying event, such as a secondary game symbol, which is obtained, a given number of secondary game wagering points or credits is accumulated in a "secondary game meter" configured to accrue the secondary game wagering credits or entries toward eventual participation in the secondary game. In one such embodiment, the occurrence of multiple such secondary game qualifying events in the primary game results in an arithmetic or exponential increase in the number of secondary game wagering credits awarded. In another such embodiment, any extra secondary game wagering credits may be redeemed during the secondary game to extend play of the secondary game. In various embodiments, no separate entry fee or buy-in for the secondary game is required. That is, entry into the secondary game cannot be purchased; rather, in these embodiments' entry must be won or earned through play of the primary game, thereby encouraging play of the primary game. In other embodiments, qualification for the secondary game is accomplished through a simple "buy-in." For example, qualification through other specified activities is unsuccessful, payment of a fee or placement of an additional wager "buys-in" to the secondary game. In various embodiments, a separate side wager must be placed on the secondary game, or a wager of a designated amount must be placed on the primary game to enable qualification for the secondary game. In these embodiments, the secondary game triggering event must occur and the side wager (or designated primary game wager amount) must have been placed for the secondary game to trigger.

In various embodiments in which the system includes a plurality of streaming devices and/or client devices, the streaming devices and/or the client devices are configured to communicate with one another to provide a group gaming environment. In certain such embodiments, the streaming devices and/or the client devices enable users of those streaming devices and/or client devices to work in conjunction with one another, such as by enabling the users to play together as a team or group, to win one or more awards. In other such embodiments, the streaming devices and/or the client devices enable users of those streaming devices and/or client devices to compete against one another for one or more awards. In one such embodiment, the streaming devices and/or the client devices enable the users of those



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streaming devices and/or client devices to participate in one or more gaming tournaments for one or more awards.

In various embodiments, the system includes one or more player tracking systems. Such player tracking systems enable operators of the system (such as casinos or other gaming establishments) to recognize the value of customer loyalty by identifying frequent customers and rewarding them for their patronage. Such a player tracking system is configured to track a user's gaming activity. In one such embodiment, the player tracking system does so through the use of player tracking cards. In this embodiment, a user is issued a user identification card that has an encoded user identification number that uniquely identifies the user. When the user's playing tracking card is inserted into a card reader of the system to begin a gaming session, the card reader reads the user identification number off the player tracking card to identify the user. The system timely tracks any suitable information or data relating to the identified user's gaming session. The system also timely tracks when the player tracking card is removed to conclude play for that gaming session. In another embodiment, rather than requiring insertion of a player tracking card into the card reader, the system utilizes one or more portable devices, such as a mobile phone, a radio frequency identification tag, or any other suitable wireless device, to track when a gaming session begins and ends. In another embodiment, the system utilizes any suitable biometric technology or ticket technology to track when a gaming session begins and ends.

In such embodiments, during one or more gaming sessions, the system tracks any suitable information or data, such as any amounts wagered, average wager amounts, and/or the time at which these wagers are placed. In different embodiments, for one or more users, the player tracking system includes the user's account number, the user's card number, the user's first name, the user's surname, the user's preferred name, the user's player tracking ranking, any promotion status associated with the user's player tracking card, the user's address, the user's birthday, the user's anniversary, the user's recent gaming sessions, or any other suitable data. In various embodiments, such tracked information and/or any suitable feature associated with the player tracking system is displayed on a player tracking display. In various embodiments, such tracked information and/or any suitable feature associated with the player tracking system is displayed via one or more service windows that are displayed on the central display device and/or the upper display device.

In various embodiments, the system includes one or more servers configured to communicate with a personal gaming device—such as a smartphone, a tablet computer, a desktop computer, or a laptop computer—to enable web-based game play using the personal gaming device. In various embodiments, the user must first access a gaming website via an internet browser of the personal gaming device or execute an application (commonly called an “app”) installed on the personal gaming device before the user can use the personal gaming device to participate in web-based game play. In various embodiments, the one or more servers and the personal gaming device operate in a thin-client environment. In these embodiments, the personal gaming device receives inputs via one or more input devices (such as a touch screen and/or physical buttons), the personal gaming device sends the received inputs to the one or more servers, the one or more servers make various determinations based on the inputs and determine content to be displayed (such as a randomly determined game outcome and corresponding

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award), the one or more servers send the content to the personal gaming device, and the personal gaming device displays the content.

In certain such embodiments, the one or more servers must identify the user before enabling game play on the personal gaming device (or, in some embodiments, before enabling monetary wager-based game play on the personal gaming device). In these embodiments, the user must identify herself to the one or more servers, such as by inputting the user's unique username and password combination (or in any other manners described above).

Once identified, the one or more servers enable the user to establish an account balance from which the user can draw credits usable to wager on plays of a game. In various embodiments, the one or more servers enable the user to initiate an electronic funds transfer to transfer funds from a bank account to the user's account balance. In other embodiments, the one or more servers enable the user to make a payment using the user's credit card, debit card, or other suitable device to add money to the user's account balance. In other embodiments, the one or more servers enable the user to add money to the user's account balance via a peer-to-peer type application, such as PayPal or Venmo. The one or more servers also enable the user to cash out the user's account balance (or part of it) in any suitable manner, such as via an electronic funds transfer or by initiating creation of a paper check that is mailed to the user.

In various embodiments, the one or more servers include a payment server that handles establishing and cashing out users' account balances and a separate game server configured to determine the outcome and any associated award for a play of a game. In these embodiments, the game server is configured to communicate with the personal gaming device and the payment device, and the personal gaming device and the payment device are not configured to directly communicate with one another. In these embodiments, when the game server receives data representing a request to start a play of a game at a desired wager, the game server sends data representing the desired wager to the payment server. The payment server determines whether the user's account balance can cover the desired wager (i.e., includes a monetary balance at least equal to the desired wager).

If the payment server determines that the user's account balance cannot cover the desired wager, the payment server notifies the game server, which then instructs the personal gaming device to display a suitable notification to the user that the user's account balance is too low to place the desired wager. If the payment server determines that the user's account balance can cover the desired wager, the payment server deducts the desired wager from the account balance and notifies the game server. The game server then determines an outcome and any associated award for the play of the game. The game server notifies the payment server of any nonzero award, and the payment server increases the user's account balance by the nonzero award. The game server sends data representing the outcome and any award to the personal gaming device, which displays the outcome and any award.

In various embodiments, the one or more servers enable web-based game play using a personal gaming device only if the personal gaming device satisfies one or more jurisdictional requirements. In one embodiment, the one or more servers enable web-based game play using the personal gaming device only if the personal gaming device is located within a designated geographic area (such as within certain state or county lines). In this embodiment, the geolocation module of the personal gaming device determines the loca-



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tion of the personal gaming device and sends the location to the one or more servers, which determine whether the personal gaming device is located within the designated geographic area. In various embodiments, the one or more servers enable non-monetary wager-based game play if the personal gaming device is located outside of the designated geographic area.

In various embodiments, the system includes a streaming device and/or a client device configured to communicate with a personal gaming device—such as a smartphone, a tablet computer, a desktop computer, or a laptop computer—to enable tethered mobile game play using the personal gaming device. Generally, in these embodiments, the streaming device and/or the client device establishes communication with the personal gaming device and enables the user to play games on the streaming device and/or the client device remotely via the personal gaming device. In various embodiments, the system includes a geo-fence system that enables tethered game play within a particular geographic area but not outside of that geographic area.

In various embodiments, the system is configured to communicate with a social network server that hosts or partially hosts a social networking website via a data network (such as the internet) to integrate a user's gaming experience with the user's social networking account. This enables the system to send certain information to the social network server that the social network server can use to create content (such as text, an image, and/or a video) and post it to the user's wall, newsfeed, or similar area of the social networking website accessible by the user's connections (and in certain cases the public) such that the user's connections can view that information. This also enables the system to receive certain information from the social network server, such as the user's likes or dislikes or the user's list of connections. In various embodiments, the system enables the user to link the user's user account to the user's social networking account(s). This enables the system to, once it identifies the user and initiates a gaming session (such as via the user logging in to a website (or an application) on the user's personal gaming device or via the user inserting the user's player tracking card into a streaming device and/or a client device), link that gaming session to the user's social networking account(s). In other embodiments, the system enables the user to link the user's social networking account(s) to individual gaming sessions when desired by providing the required login information.

For instance, in one embodiment, if a user wins a particular award (e.g., a progressive award or a jackpot award) or an award that exceeds a certain threshold (e.g., an award exceeding \$1,000), the system sends information about the award to the social network server to enable the server to create associated content (such as a screenshot of the outcome and associated award) and to post that content to the user's wall (or other suitable area) of the social networking website for the user's connections to see (and to entice them to play). In another embodiment, if a user joins a multiplayer game and there is another seat available, the system sends that information to the social network server to enable the server to create associated content (such as text indicating a vacancy for that particular game) and to post that content to the user's wall (or other suitable area) of the social networking website for the user's connections to see (and to entice them to fill the vacancy). In another embodiment, if the user consents, the system sends advertisement information or offer information to the social network server to enable the social network server to create associated content (such as text or an image reflecting an advertisement and/or an offer)

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and to post that content to the user's wall (or other suitable area) of the social networking website for the user's connections to see. In another embodiment, the system enables the user to recommend a game to the user's connections by posting a recommendation to the user's wall (or other suitable area) of the social networking website.

Certain of the devices or components of the present disclosure, such as streaming devices and/or client devices located in a casino or another gaming establishment, include certain components and/or are configured to operate in certain manners that differentiate these systems from general purpose computing devices.

For instance, EGMs are highly regulated to ensure fairness, and, in many cases, EGMs are configured to award monetary awards up to multiple millions of dollars. To satisfy security and regulatory requirements in a gaming environment, hardware and/or software architectures are implemented in EGMs that differ significantly from those of general purpose computing devices. For purposes of illustration, a description of EGMs relative to general purpose computing devices and some examples of these additional (or different) hardware and/or software architectures found in EGMs are described below.

At first glance, one might think that adapting general purpose computing device technologies to the gaming industry and EGMs would be a simple proposition because both general purpose computing devices and EGMs employ processors that control a variety of devices. However, due to at least: (1) the regulatory requirements placed on EGMs, (2) the harsh environment in which EGMs operate, (3) security requirements, and (4) fault tolerance requirements, adapting general purpose computing device technologies to EGMs can be quite difficult. Further, techniques and methods for solving a problem in the general purpose computing device industry, such as device compatibility and connectivity issues, might not be adequate in the gaming industry. For instance, a fault or a weakness tolerated in a general purpose computing device, such as security holes in software or frequent crashes, is not tolerated in an EGM because in an EGM these faults can lead to a direct loss of funds from the EGM, such as stolen cash or loss of revenue when the EGM is not operating properly or when the random outcome determination is manipulated.

Certain differences between general purpose computing devices and EGMs are described below. A first difference between EGMs and general purpose computing devices is that EGMs are state-based systems. A state-based system stores and maintains its current state in a non-volatile memory such that, in the event of a power failure or other malfunction, the state-based system can return to that state when the power is restored, or the malfunction is remedied. For instance, for a state-based EGM, if the EGM displays an award for a game of chance but the power to the EGM fails before the EGM provides the award to the user, the EGM stores the pre-power failure state in a non-volatile memory, returns to that state upon restoration of power, and provides the award to the user. This requirement affects the software and hardware design on EGMs. General purpose computing devices are not state-based machines, and a majority of data is usually lost when a malfunction occurs on a general purpose computing device.

A second difference between EGMs and general purpose computing devices is that, for regulatory purposes, the software on the EGM utilized to operate the EGM has been designed to be static and monolithic to prevent cheating by the operator of the EGM. For instance, one solution that has been employed in the gaming industry to prevent cheating



and to satisfy regulatory requirements has been to manufacture an EGM that can use a proprietary processor running instructions to provide the game of chance from an EPROM or other form of non-volatile memory. The coding instructions on the EPROM are static (non-changeable) and must be approved by a gaming regulators in a particular jurisdiction and installed in the presence of a person representing the gaming jurisdiction. Any changes to any part of the software required to generate the game of chance, such as adding a new device driver used to operate a device during generation of the game of chance, can require burning a new EPROM approved by the gaming jurisdiction and reinstalling the new EPROM on the EGM in the presence of a gaming regulator. Regardless of whether the EPROM solution is used, to gain approval in most gaming jurisdictions, an EGM must demonstrate sufficient safeguards that prevent an operator or a user of an EGM from manipulating the EGM's hardware and software in a manner that gives him an unfair, and in some cases illegal, advantage.

A third difference between EGMs and general purpose computing devices is authentication-EGMs storing code are configured to authenticate the code to determine if the code is unaltered before executing the code. If the code has been altered, the EGM prevents the code from being executed. The code authentication requirements in the gaming industry affect both hardware and software designs on EGMs. Certain EGMs use hash functions to authenticate code. For instance, one EGM stores game program code, a hash function, and an authentication hash (which may be encrypted). Before executing the game program code, the EGM hashes the game program code using the hash function to obtain a result hash and compares the result hash to the authentication hash. If the result hash matches the authentication hash, the EGM determines that the game program code is valid and executes the game program code. If the result hash does not match the authentication hash, the EGM determines that the game program code has been altered (i.e., may have been tampered with) and prevents execution of the game program code.

A fourth difference between EGMs and general purpose computing devices is that EGMs have unique peripheral device requirements that differ from those of a general purpose computing device, such as peripheral device security requirements not usually addressed by general purpose computing devices. For instance, monetary devices, such as coin dispensers, bill validators, and ticket printers and computing devices that are used to govern the input and output of cash or other items having monetary value (such as tickets) to and from an EGM have security requirements that are not typically addressed in general purpose computing devices. Therefore, many general purpose computing device techniques and methods developed to facilitate device connectivity and device compatibility do not address the emphasis placed on security in the gaming industry.

To address some of the issues described above, a number of hardware/software components and architectures are utilized in EGMs that are not typically found in general purpose computing devices. These hardware/software components and architectures, as described below in more detail, include but are not limited to watchdog timers, voltage monitoring systems, state-based software architecture and supporting hardware, specialized communication interfaces, security monitoring, and trusted memory.

Certain EGMs use a watchdog timer to provide a software failure detection mechanism. In a normally-operating EGM, the operating software periodically accesses control registers in the watchdog timer subsystem to "re-trigger" the

watchdog. Should the operating software fail to access the control registers within a preset timeframe, the watchdog timer will timeout and generate a system reset. Typical watchdog timer circuits include a loadable timeout counter register to enable the operating software to set the timeout interval within a certain range of time. A differentiating feature of some circuits is that the operating software cannot completely disable the function of the watchdog timer. In other words, the watchdog timer always functions from the time power is applied to the board.

Certain EGMs use several power supply voltages to operate portions of the computer circuitry. These can be generated in a central power supply or locally on the computer board. If any of these voltages falls out of the tolerance limits of the circuitry they power, unpredictable operation of the EGM may result. Though most modern general purpose computing devices include voltage monitoring circuitry, these types of circuits only report voltage status to the operating software. Out of tolerance voltages can cause software malfunction, creating a potential uncontrolled condition in the general purpose computing device. Certain EGMs have power supplies with relatively tighter voltage margins than that required by the operating circuitry. In addition, the voltage monitoring circuitry implemented in certain EGMs typically has two thresholds of control. The first threshold generates a software event that can be detected by the operating software and an error condition then generated. This threshold is triggered when a power supply voltage falls out of the tolerance range of the power supply, but is still within the operating range of the circuitry. The second threshold is set when a power supply voltage falls out of the operating tolerance of the circuitry. In this case, the circuitry generates a reset, halting operation of the EGM.

As described above, certain EGMs are state-based machines. Different functions of the game provided by the EGM (e.g., bet, play, result, points in the graphical presentation, etc.) may be defined as a state. When the EGM moves a game from one state to another, the EGM stores critical data regarding the game software in a custom non-volatile memory subsystem. This ensures that the user's wager and credits are preserved and to minimize potential disputes in the event of a malfunction on the EGM. In general, the EGM does not advance from a first state to a second state until critical information that enables the first state to be reconstructed has been stored. This feature enables the EGM to recover operation to the current state of play in the event of a malfunction, loss of power, etc. that occurred just before the malfunction. In at least one embodiment, the EGM is configured to store such critical information using atomic transactions.

Generally, an atomic operation in computer science refers to a set of operations that can be combined so that they appear to the rest of the system to be a single operation with only two possible outcomes: success or failure. As related to data storage, an atomic transaction may be characterized as series of database operations which either all occur, or all do not occur. A guarantee of atomicity prevents updates to the database occurring only partially, which can result in data corruption.

To ensure the success of atomic transactions relating to critical information to be stored in the EGM memory before a failure event (e.g., malfunction, loss of power, etc.), memory that includes one or more of the following criteria be used: direct memory access capability; data read/write capability which meets or exceeds minimum read/write access characteristics (such as at least 5.08 Mbytes/sec



(Read) and/or at least 38.0 Mbytes/sec (Write)). Memory devices that meet or exceed the above criteria may be referred to as “fault-tolerant” memory devices.

Typically, battery-backed RAM devices may be configured to function as fault-tolerant devices according to the above criteria, whereas flash RAM and/or disk drive memory are typically not configurable to function as fault-tolerant devices according to the above criteria. Accordingly, battery-backed RAM devices are typically used to preserve EGM critical data, although other types of non-volatile memory devices may be employed. These memory devices are typically not used in typical general purpose computing devices.

Thus, in at least one embodiment, the EGM is configured to store critical information in fault-tolerant memory (e.g., battery-backed RAM devices) using atomic transactions. Further, in at least one embodiment, the fault-tolerant memory is able to successfully complete all desired atomic transactions (e.g., relating to the storage of EGM critical information) within a time period of 200 milliseconds or less. In at least one embodiment, the time period of 200 milliseconds represents a maximum amount of time for which sufficient power may be available to the various EGM components after a power outage event has occurred at the EGM.

As described previously, the EGM may not advance from a first state to a second state until critical information that enables the first state to be reconstructed has been atomically stored. After the state of the EGM is restored during the play of a game of chance, game play may resume, and the game may be completed in a manner that is no different than if the malfunction had not occurred. Thus, for example, when a malfunction occurs during a game of chance, the EGM may be restored to a state in the game of chance just before when the malfunction occurred. The restored state may include metering information and graphical information that was displayed on the EGM in the state before the malfunction. For example, when the malfunction occurs during the play of a card game after the cards have been dealt, the EGM may be restored with the cards that were previously displayed as part of the card game. As another example, a bonus game may be triggered during the play of a game of chance in which a user is required to make a number of selections on a video display screen. When a malfunction has occurred after the user has made one or more selections, the EGM may be restored to a state that shows the graphical presentation just before the malfunction including an indication of selections that have already been made by the user. In general, the EGM may be restored to any state in a plurality of states that occur in the game of chance that occurs while the game of chance is played or to states that occur between the play of a game of chance.

Game history information regarding previous games played such as an amount wagered, the outcome of the game, and the like may also be stored in a non-volatile memory device. The information stored in the non-volatile memory may be detailed enough to reconstruct a portion of the graphical presentation that was previously presented on the EGM and the state of the EGM (e.g., credits) at the time the game of chance was played. The game history information may be utilized in the event of a dispute. For example, a user may decide that in a previous game of chance that they did not receive credit for an award that they believed they won. The game history information may be used to reconstruct the state of the EGM before, during, and/or after the disputed game to demonstrate whether the user was correct or not in the user's assertion.

Another feature of EGMs is that they often include unique interfaces, including serial interfaces, to connect to specific subsystems internal and external to the EGM. The serial devices may have electrical interface requirements that differ from the “standard” EIA serial interfaces provided by general purpose computing devices. These interfaces may include, for example, Fiber Optic Serial, optically coupled serial interfaces, current loop style serial interfaces, etc. In addition, to conserve serial interfaces internally in the EGM, serial devices may be connected in a shared, daisy-chain fashion in which multiple peripheral devices are connected to a single serial channel.

The serial interfaces may be used to transmit information using communication protocols that are unique to the gaming industry. For example, IGT's Netplex is a proprietary communication protocol used for serial communication between EGMs. As another example, SAS is a communication protocol used to transmit information, such as metering information, from an EGM to a remote device. Often SAS is used in conjunction with a player tracking system.

Certain EGMs may alternatively be treated as peripheral devices to a casino communication controller and connected in a shared daisy chain fashion to a single serial interface. In both cases, the peripheral devices are assigned device addresses. If so, the serial controller circuitry must implement a method to generate or detect unique device addresses. General purpose computing device serial ports are not able to do this.

Security monitoring circuits detect intrusion into an EGM by monitoring security switches attached to access doors in the EGM cabinet. Access violations result in suspension of game play and can trigger additional security operations to preserve the current state of game play. These circuits also function when power is off by use of a battery backup. In power-off operation, these circuits continue to monitor the access doors of the EGM. When power is restored, the EGM can determine whether any security violations occurred while power was off, e.g., via software for reading status registers. This can trigger event log entries and further data authentication operations by the EGM software.

Trusted memory devices and/or trusted memory sources are included in an EGM to ensure the authenticity of the software that may be stored on less secure memory subsystems, such as mass storage devices. Trusted memory devices and controlling circuitry are typically designed to not enable modification of the code and data stored in the memory device while the memory device is installed in the EGM. The code and data stored in these devices may include authentication algorithms, random number generators, authentication keys, operating system kernels, etc. The purpose of these trusted memory devices is to provide gaming regulatory authorities a root trusted authority within the computing environment of the EGM that can be tracked and verified as original. This may be accomplished via removal of the trusted memory device from the EGM computer and verification of the secure memory device contents is a separate third party verification device. Once the trusted memory device is verified as authentic, and based on the approval of the verification algorithms included in the trusted device, the EGM is enabled to verify the authenticity of additional code and data that may be located in the gaming computer assembly, such as code and data stored on hard disk drives.

In at least one embodiment, at least a portion of the trusted memory devices/sources may correspond to memory that cannot easily be altered (e.g., “unalterable memory”) such as EPROMS, PROMS, Bios, Extended Bios, and/or other



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memory sources that are able to be configured, verified, and/or authenticated (e.g., for authenticity) in a secure and controlled manner.

According to one embodiment, when a trusted information source is in communication with a remote device via a network, the remote device may employ a verification scheme to verify the identity of the trusted information source. For example, the trusted information source and the remote device may exchange information using public and private encryption keys to verify each other's identities. In another embodiment, the remote device and the trusted information source may engage in methods using zero knowledge proofs to authenticate each of their respective identities.

EGMs storing trusted information may utilize apparatuses or methods to detect and prevent tampering. For instance, trusted information stored in a trusted memory device may be encrypted to prevent its misuse. In addition, the trusted memory device may be secured behind a locked door. Further, one or more sensors may be coupled to the memory device to detect tampering with the memory device and provide some record of the tampering. In yet another example, the memory device storing trusted information might be designed to detect tampering attempts and clear or erase itself when an attempt at tampering has been detected.

Mass storage devices used in a general purpose computing devices typically enable code and data to be read from and written to the mass storage device. In a gaming environment, modification of the gaming code stored on a mass storage device is strictly controlled and would only be enabled under specific maintenance type events with electronic and physical enablers required. Though this level of security could be provided by software, EGMs that include mass storage devices include hardware level mass storage data protection circuitry that operates at the circuit level to monitor attempts to modify data on the mass storage device and will generate both software and hardware error triggers should a data modification be attempted without the proper electronic and physical enablers being present.

It should be appreciated that the terminology used herein is for the purpose of describing particular aspects only and is not intended to be limiting of the disclosure. For example, the singular forms "a," "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. In another example, the terms "including" and "comprising" and variations thereof, when used in this specification, specify the presence of stated features, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, steps, operations, elements, components, and/or groups thereof. Additionally, a listing of items does not imply that any or all of the items are mutually exclusive nor does a listing of items imply that any or all of the items are collectively exhaustive of anything or in a particular order, unless expressly specified otherwise. Moreover, as used herein, the term "and/or" includes any and all combinations of one or more of the associated listed items. It should be further appreciated that headings of sections provided in this document and the title are for convenience only, and are not to be taken as limiting the disclosure in any way. Furthermore, unless expressly specified otherwise, devices that are in communication with each other need not be in continuous communication with each other and may communicate directly or indirectly through one or more intermediaries.

Various changes and modifications to the present embodiments described herein will be apparent to those skilled in the art. For example, a description of an embodiment with

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several components in communication with each other does not imply that all such components are required, or that each of the disclosed components must communicate with every other component. On the contrary a variety of optional components are described to illustrate the wide variety of possible embodiments of the present disclosure. As such, these changes and modifications can be made without departing from the spirit and scope of the present subject matter and without diminishing its intended technical scope. It is therefore intended that such changes and modifications be covered by the appended claims.

We claim:

1. An electronic gaming machine comprising a cabinet;  
a live streaming slot machine interface board supported by the cabinet;  
a video camera supported by the cabinet and communicatively connected to the live streaming slot machine interface board, the video camera configured to capture video of a streamer and to communicate signals representing the captured video to the live streaming slot machine interface board, wherein the video camera is mounted to a side wall of the cabinet, and wherein the video camera is moveable relative to the side wall of the cabinet from a use position to a non-use position;  
a microphone supported by the cabinet and communicatively connected to the live streaming slot machine interface board, the microphone configured to capture audio of the streamer and to communicate signals representing the captured audio to the live streaming slot machine interface board;  
a display device supported by the cabinet, configured to display plays of a wagering game, and configured to additionally display the captured video of the streamer; and  
a sound producing device supported by the cabinet and configured to produce sounds of the plays of the wagering game.

2. The electronic gaming machine of claim 1, wherein the video camera is mounted adjacent to the display device.

3. The electronic gaming machine of claim 1, which comprises an input device supported by the cabinet and configured to enable control of the video camera.

4. The electronic gaming machine of claim 1, which comprises an audio producing device configured to provide the captured audio of the streamer via a different channel than the sound producing device.

5. The electronic gaming machine of claim 1, which comprises an input device supported by the cabinet and configured to enable the streamer to configure a stream mix of the plays of the wagering game and the video of the streamer.

6. The electronic gaming machine of claim 1, which comprises an input device supported by the cabinet and configured to enable the streamer to configure a live stream mix of the plays of the wagering game and the video of the streamer.

7. The electronic gaming machine of claim 6, wherein the live streaming slot machine interface board is configured to cause a transmission of the live stream mix of the plays of wagering game and the video of the streamer to a remote viewer electronic gaming machine.

8. The electronic gaming machine of claim 1, wherein the live streaming slot machine interface board is configured to transmit a live stream mix of the displays of the plays of wagering games, the sounds of the plays of the wagering game, the captured video, and the captured audio.



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9. An electronic gaming machine comprising  
 a cabinet;  
 a live streaming slot machine interface board supported  
 the cabinet;  
 a video camera supported by the cabinet and communi- 5  
 catively connected to the live streaming slot machine  
 interface board, the video camera configured to capture  
 video of a streamer and to communicate signals repre-  
 senting the captured video to the slot machine interface  
 board, wherein the video camera is mounted to a side 10  
 wall of the cabinet, and wherein the video camera is  
 moveable relative to the side wall of the cabinet from  
 a use position to a non-use position;  
 a microphone supported by the cabinet and communica- 15  
 tively connected to the live streaming slot machine  
 interface board, the microphone configured to capture  
 audio of the streamer and to communicate signals  
 representing the captured audio to the live streaming  
 slot machine interface board;  
 a main display device supported by the cabinet and 20  
 configured to display plays of a wagering game;  
 a sound producing device supported by the cabinet and  
 configured to produce sounds of the plays of the  
 wagering game; and  
 an auxiliary display device supported by the cabinet and 25  
 configured to display the video of the streamer captured  
 by video camera.
10. The electronic gaming machine of claim 9, wherein  
 the auxiliary display device is mounted to the side wall of  
 the cabinet. 30
11. The electronic gaming machine of claim 10, wherein  
 the auxiliary display device is moveable relative to the side  
 wall of the cabinet from a use position to a non-use position.
12. The electronic gaming machine of claim 9, which  
 comprises an auxiliary audio producing device supported by 35  
 the cabinet and configured to provide the audio of the  
 streamer via a different channel than the sound producing  
 device.
13. The electronic gaming machine of claim 9, which  
 comprises an input device supported by the cabinet and 40  
 configured to enable the streamer to configure a live stream  
 mix of the plays of the wagering game and the captured  
 video of the streamer.
14. The electronic gaming machine of claim 9, wherein  
 the auxiliary display device is configured to display a live 45  
 stream mix of the plays of the wagering game and the  
 captured video of the streamer.
15. An electronic gaming machine comprising  
 a cabinet;  
 a live streaming slot machine interface board supported 50  
 by the cabinet;

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- a video camera supported by the cabinet and communi-  
 catively connected to the live streaming slot machine  
 interface board, the video camera configured to capture  
 video of a streamer and to communicate signals repre-  
 senting the captured video to the live streaming slot  
 machine interface board, wherein the video camera is  
 mounted to a side wall of the cabinet, and wherein the  
 video camera is moveable relative to the side wall of  
 the cabinet from a use position to a non-use position;  
 a main display device supported by the cabinet and  
 configured to display plays of a wagering game;  
 a sound producing device supported by the cabinet and  
 configured to produce sounds of the plays of the  
 wagering game; and  
 an output port supported by the cabinet and communica-  
 tively connected to the live streaming slot machine  
 interface board, the output port configured to connect to  
 a communication wire connectable to a streamer's  
 computing device and to facilitate communication of  
 data from the live streaming slot machine interface  
 board to the streamer's computing device, wherein the  
 data represents the displays of the plays of the wagering  
 game and the sounds of the plays of the wagering game,  
 wherein the data is in a format that is combinable by the  
 streamer's computing device with captured video and  
 captured audio of the streamer to create a live stream  
 mix of the displays of the plays of the wagering games,  
 the sounds of the plays of the wagering game, the  
 captured video, and the captured audio.
16. The electronic gaming machine of claim 15, which  
 comprises:  
 a video camera supported by the cabinet and communi-  
 catively connected to the live streaming slot machine  
 interface board, the video camera configured to capture  
 video of the streamer and to communicate signals  
 representing captured video to the live streaming slot  
 machine interface board; and  
 a microphone supported by the cabinet and communica-  
 tively connected to the live streaming slot machine  
 interface board, the microphone configured to capture  
 audio of the streamer and to communicate signals  
 representing the captured audio to the live streaming  
 slot machine interface board.
17. The electronic gaming machine of claim 16, wherein  
 the output port is configured to facilitate communication of  
 the captured video and the captured audio from the live  
 streaming slot machine interface board to the streamer's  
 computing device.

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